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AZINE

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"Summer Complaint"

was not a disease; it was a dozen diseases

"SUMMER COMPLAINT," so mild-sounding in name, once took terrible toll of infants' lives. A medical historian tells us that in London in the hot summers of 1669-71 as many as 2,000 babies died of diarrhea in eight or ten weeks. Indeed, prior to the present century most of the deaths among babies were caused by diarrheal disorders.

Those were the days before bacteriology, before pasteurization of milk, before purification of drinking water, before modern classification of diseases and their treatment. Then, a score or more of diseases were grouped under the name "summer complaint,"—typhoid fever, cholera and dysentery among them. Treatment was multitudinous and fantastic.

Dysentery was supposed to be more frequent among children of the poor who could not afford wine, when actually it was because they lived in filthy, overcrowded tenements infested with disease-bearing bacteria.

Physicians today know that diarrhea must be treated internally but in ancient times abdominal plasters were highly regarded. An old Arabian recipe recommended "applying to the belly fomentations of rose-seed or parsley seed or anise or cumin, or a poultice may be laid on the belly, of cumin and roses steeped in vinegar or of millet boiled with a little vinegar." Even as recently as 1899 a family "doctor book" advocated placing on the child's stomach a spice-plaster made of a teaspoonful each of powdered ginger, cloves, and cinnamon, made into a thick paste with whiskey or brandy. Public education on health topics came to mothers via the patent medicine almanac instead of from an authoritative dependable non-mercenary source like Hygeia.

One of the most pernicious customs was to bleed the baby by placing a live leech on its body. Violent purgatives in doses stronger than would be given to adults today were the rule in treating "summer complaint." An equally vicious habit was the giving of opium, a practice that carries down to the present time with so-called soothing syrups, many of which contain narcotics. The family bottle of paregoric, by masking serious symptoms, sent many an infant to an early grave. Grandmothers disagreed about the treatment of "summer complaint,"—some advocated raw meat while others thought salt meat was best. No wonder that a modern physician writing of that era describes the baby as "our little hero." One of the pleasanter remedies was "a sugar rosat, softened with rose or pomegranate syrup." Between times, the baby was given a chamois or rubber nipple to suck, and an ivory ring to chew.

PORTRAIT OF A SICK CHILD
by the Dutch painter Gabriel Metsu (1630-1667)
The late Professor Ruhrah commented: "The child evidently has a fever, and from the expression one might hazard a guess that the cause was an upset intestinal tract." The Dutch probably called it *zomer ziekte* (summer complaint).

The advent of twentieth century medicine was like a great burst of light in the dark world for babies. In the past 30 years the science of pediatrics has made more progress than during the 300 years preceding. Even since 1895 deaths from dysentery have become a fraction of what they once were and could be reduced still more if the public would but accept the knowledge which medical science offers. The modern physician knows how to control colic and diarrhea and typhoid and allergy and dozens of other children's disorders that were once grouped by the laity under the meaningless name of "summer complaint."

BABIES SUPERVISED BY PHYSICIANS ARE BETTER BABIES

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HYGEIA•

AUGUST 1937

THE HEALTH MAGAZINE

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Volume 15
Number 8

WE PRESENT•

HAY FEVER AND WEEDS.....Page 678
an editorial by Dr. W. W. Bauer, Associate Editor of Hygeia.

AIR CONDITIONING.....Page 680
an article on progress in tailor-made weather by S. R. Winters.

WHAT DOES THE HEART MURMUR SAY?.....Page 684
a question answered encouragingly by Dr. Samuel H. Averbuck, who gave this information in a radio broadcast under the sponsorship of the New York Academy of Medicine.

THE SPRINGBOARD.....Page 687
a poem by Marion Strobel.

IT'S ICE CREAM—AND THERE'S SAUCE FOR IT.....Page 688
and also recipes that are simply intriguing and intriguingly simple. Miss E. M. Geraghty, director of dietetics, Union Memorial Hospital, Baltimore, is the author of "Let's Have Pineapple," which appeared in the July Hygeia.

SYMPATHETIC INFLAMMATION.....Page 691
a serious ophthalmic condition discussed by Dr. William Zentmayer.

DIABETIC GANGRENE.....Page 692
an article in which A. Owen Penney discusses the need for the podiatrist in the diabetic clinic.

THE TRUTH ABOUT ACIDOSIS.....Page 693
the layman misjudges it, for the ads misrepresent it; so James A. Tobey, Dr.P.H., clears it all up. Dr. Tobey is the author of numerous other Hygeia articles.

BAD HABITS IN GOOD BABIES: PART I.....Page 696
the first of a series of articles on physiologic and psychologic factors influencing infant behavior by Dr. Herman M. Jahr.

THE TUBERCULOSIS OF TODAY.....Page 700
yesterday it was a dictator; today sees a revolution, and tomorrow may the forces of health triumph! Dr. E. W. Billard, who discusses the modern aspects of tuberculosis, gave this paper as a radio address under the auspices of the Bronx County Medical Society.

FLORENCE NIGHTINGALE.....Page 703
an appreciation of the human side of the Lady with the Lamp. Annette Fiske, author of many other historical sketches, contributes these biographic data in commemoration of the death of Florence Nightingale, Aug. 13, 1910.

MAD DOG!.....Page 706
the first of a series of stories told by the old-time doctor to his little son. In fiction form, Dr. Fred O. Tonney deals with a question of vital importance.

ANIMALS OF DESTINY.....Page 709
a survey of the harmful and the beneficial influences exerted on man's progress by the lower animals. Dr. Thomas Gordon Hull, director of exhibits, American Medical Association, considers the diseases conveyed by animals to man and the alleviation of suffering which has come as a result of animal experimentation.

"DOCTOR, WHAT DENTIFRICE SHALL I USE?".....Page 714
a question answered by Samuel M. Gordon, secretary, Council on Dental Therapeutics, American Dental Association, and Eleanore B. Dufour, co-authors of "Pyorrhea Quackery," which has appeared in Hygeia.

CONTACT GLASSES.....Page 717
another article by Dr. James E. Lebensohn, who has written on "The Mechanics of Reading," "Mysteries of Vision" and "The Selling of Glasses."

IS MARY'S BACK STRAIGHT?.....Page 720
if so, good; if not, Dr. J. C. Elsom, emeritus professor of physical education and physical therapy, University of Wisconsin Medical School, tells how curve consciousness at an early age will help to straighten it.

DON'T LET YOUR SICK CHILD BECOME A PROBLEM CHILD.Page 724
constructive advice on preventing behavior problems in sick and convalescent children, presented by Rose H. Alschuler, director Winnetka, Ill., Public School Nursery and the W.P.A. Nursery Schools of Chicago, and LaBerta A. Hattwick, psychologist and research director, Winnetka Public School Nursery.

RABIES: A PLEA FOR CONQUEST THROUGH COOPERATION.Page 726
an article on rabies and hydrophobia by Dr. Herman N. Bundesen, president, Board of Health, City of Chicago.

HEALTH RESORTS.....Page 728
elusive and frequently ignored points to be considered in choosing a health resort. The article is by Anne Breckinridge.

CATHARTIC-CONSCIOUS AMERICA.....Page 731
called to task by Dr. Lemuel C. McGee, who discusses the use and abuse of laxative and cathartic drugs and evils of self medication.

TENNIS: PART 2.....Page 736
a discussion of strategy in singles and doubles, the concluding part of Dr. Dudley B. Reed's discussion of tennis. The author is professor of hygiene, the School of Medicine of the Division of Biological Sciences, University of Chicago.

ANDREAS VESALIUS.....Page 739
a brief biography of the father of scientific anatomy. This article is written and illustrated by Adolph Beilin.

THE RABBIT.....Page 741
a poem by Marguerite Gode.

"BUT IT WAS ONLY A LITTLE PIMPLE!".....Page 742
Robert Toubib tells how furuncle of the mask becomes a death mask for one in every ten of its victims.

OLD TEASER ASKS QUESTIONS ABOUT LIFE.....Page 745
and gets the answers in another of Philip Jared's stories of the adventures of the Answith family.

HEALTH PURSUITS IN PICTURES.....Pages 695; 713; 723

HEALTHGRAMS.....Page 719

FORECAST FOR SEPTEMBER.....Page 734

NEW BOOKS ON HEALTH.....Page 735

SCHOOL AND HEALTH.....Page 749

QUESTIONS AND ANSWERS.....Page 753

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Adaptation . . .

MAN usually adapts himself to a change in environment by effecting a change in habits. Whether he travels the hot sands of the Sahara or the glaciers of the Arctic, he can and must adjust his habits to harmonize with his surroundings. But the complexity of the problems he faces far exceeds the limitations of either the torrid or tropic regions alone. Within his own urban or rural life, he constantly makes transitions which dictate a change in habits. A week-end trip or an extended vacation, any deviation from the usual routine requires an adjustment of daily habits to compensate the change.

When you are on your vacation this summer make a sincere effort to maintain your daily habits, especially that of bowel regularity. Do as you would at any other time of the year, eat regularly, exercise, and establish a normal bowel movement. If for any reason bowel movement is irregular, don't take a drastic purge—consult a reputable physician. He is willing and most able to recommend the proper treatment for your illness.

This is the eighth of a series of educational articles by the makers of Petrolagar—Petrolagar is a "gentle aid" to regular elimination because it permeates and softens the waste matter in the bowel. However, Petrolagar should not be self-prescribed. Like diet and all other measures dealing with the management of the intestinal tract, this treatment should be left to the discretion of the physician.

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Hay Fever and Weeds

By W. W. BAUER

ALREADY GREAT numbers of people have begun their annual period of suffering from hay fever. Estimates indicate that 2½ million persons in the United States suffer from the autumnal type of hay fever beginning about the middle of August and continuing more or less until the first frost.

Hay fever is now considered to be a form of allergy, best described as abnormal sensitiveness to contact with substances which in themselves are harmless to the nonsensitive person. Closely allied to hay fever are "rose fever," spring hay fever, "summer colds," asthma, skin rash following the eating of certain foodstuffs, hives, eczema and digestive upsets. The list of substances which can cause allergy is almost limitless, ranging from face powder to leopard's dandruff.

Spring hay fever is due mostly to pollens of early flowering trees. Early summer hay fever is most often due to pollen from grasses; the name "rose cold" or "rose fever" is not correct but came about probably because June is the time of roses. The beautiful rose is far more conspicuous than the lowly grass whose flower usually escapes notice. In the same way, fall hay fever is commonly attributed to the brilliant goldenrod, which attracts attention because of its lovely color and diverts notice from the inconspicuous ragweed and its dull green blossom pollenating at the same time. This ragweed is the most common cause of autumn hay fever. Other weeds implicated in autumn hay fever are pigweed, giant ragweed, wormwood, cocklebur and, in certain regions, sagebrush, marsh elder and Russian thistle. All these plants have two factors in common in that they pollenate from July 15 to August 15 and thereafter, depending on latitude and season, and their pollen is wind blown.

Flowers pollenated by insects are brilliant in color and secrete nectar. Since their pollen does not blow about in the air it cannot cause hay fever unless a susceptible person sticks his nose into the flower. Not so with wind pollenated plants whose tiny pollen grains fill the atmosphere! They assail every sensitive nose, converting the unfortunate possessor thereof into a bedraggled, weeping, sneezing, nose blowing bundle of misery. The pollen attacks not only the nose but the eyes and the throat. It may even reach the middle ear through the connecting passageway from the throat.

We now know many facts about hay fever. The more common offending weeds have been identified, and their geographic distribution is known. For those who can afford it, the simplest and most obvious remedy for hay fever is to get away from the region where the weeds grow. The victim of fall hay fever has learned from experience to seek the pine woods of Maine, Michigan and Wisconsin and of the Canadian provinces, to take a long sea voyage or to repair to the higher slopes of the western mountains or to the Pacific Coast. These regions are relatively free from the weeds causing fall hay fever, which flourish wherever farm land is cultivated, and therefore infest the Middle West, the South, the East, southern

EDITORIAL

Canada and the lower valleys among the high western mountains. One of the difficulties in seeking relief from hay fever by travel is that most people cannot afford to take sufficient time to get relief for a whole season. Another difficulty is that escape from one set of offensive weeds may be offset by running into additional types of allergy due to other weeds prevalent in other localities. Deep pine forests in the northerly latitudes, where the growing season is short and where there is little cultivated land, are the best reliance. If such an area also borders on a large lake with prevailing winds across the lake, it is even better.

For those who cannot go away, medical treatment is often successful. Most experienced allergists report relief or cure in as high as 80 per cent of their cases. Extensive study is required because allergy is frequently multiple. A patient sensitive to ragweed may also be sensitive to pigweed, to other substances in the environment or to foodstuffs. This sensitiveness is discovered by skin tests made by applying a purified extract from the pollen or other substance to a scratch in the skin and observing the reaction. Sometimes it is necessary to make several hundred such tests to identify all the causes of allergy. When identification has been accomplished the next step is to eliminate from the diet and the environment as many as possible of the substances to which the patient is sensitive and to give immunizing treatment against the rest. This immunization is carried out by repeated injections into the skin, beginning with minute amounts of the offending substances and increasing as immunity develops. It is a delicate and technical procedure. The best results are obtained by year round treatment, intensified just before the hay fever season.

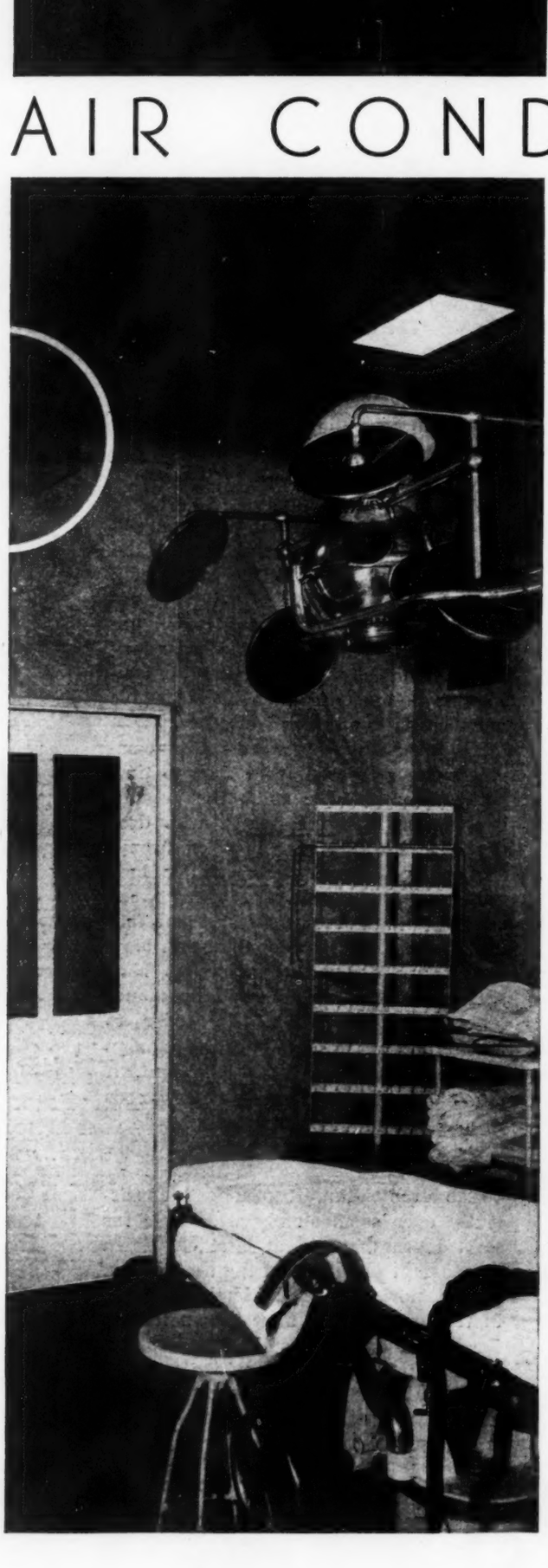
Relief is often obtained in air conditioned or air filtered rooms, as in motion picture theaters or air conditioned buildings. Appliances for filtering pollen out of the air can be installed in windows of living and sleeping quarters and of offices. These give relief while the patient remains in the filtered air and possibly for a little time thereafter. Their disadvantage is that they are confining and that the air is found stuffy and unpleasant because of the necessity for closing the room and taking in air only through the filters.

Much relief can also be given to sufferers by appropriate treatment of the eyes, nose and throat at the hands of a physician. Commercial remedies are not advised because their unsupervised use may give rise to undesirable secondary effects. Correction of defects and inflammations in the nose often helps to give relief but is not in itself curative.

Hay fever clubs and weed cutting campaigns are proposed from time to time but seldom seem to catch the popular imagination. To the person who does not have it, hay fever is often funny; not so to the victim, no matter how ludicrous his appearance. Most weed campaigns have been local and therefore futile. These pollens are light and blow tremendous distances; pollen has been recovered from air collected by planes high above the earth. In order to amount to anything a weed campaign should be at least state-wide and, if possible, regional. Cutting a few weeds in a village or county is just a waste of time and tends to discredit the idea.

Weed eradication, if practiced consistently over a sufficiently wide area for several years, would at least cut down the amount of pollen in the air. Pollen counts, now carried on by laboratories in the larger cities, have shown that as the pollen count goes down, symptoms diminish; in the less sensitive persons, a greatly diminished pollen count might even give complete relief.

AIR CONDITIONING



THE AIR CONDITIONING IN HOSPITAL OPERATING ROOMS TENDS TO KEEP POSTOPERATIVE INFECTIONS DOWN. THE DUCT IS ENCIRCLED ABOVE, LEFT.

THE Seven Ages of Man, from the nursery to the undertaking establishment, are increasingly affected by the science of air conditioning. Not only the seven ages but the entire twenty-four hours of his day are thus influenced. In fact, it is probable that the average individual may not realize how dependent he is on this source of comfort; but in all truth he could scarcely avoid its benefits even should he seek escape.

To begin with, he may be one of those fortunate beings who rises in the morning from a refreshing night's sleep in an air conditioned bed, for such novelties are now on the market. A Chicago firm is putting out an electrically operated apparatus, adjustable to any bed, which is designed to maintain a temperature of 65 F. within the curtained enclosure inhabited by the sleeper. Perhaps his entire house is air conditioned, for that matter. He commutes to his air conditioned office, store, factory, bank or courthouse on a train having weather made to order; the cigar he lights may well have been processed in a tobacco stemmery where tailor-made weather plays an important rôle, and even the match to light the cigar doubtless came from one of the air conditioned match factories now extant. The books on his desk quite possibly were printed in an establishment where the paper was finished under controlled air circulation, since printers today concede that paper swells and shrinks much less uncontrollably when not dried by old-time methods. When noon comes this individual goes to a restaurant which no longer depends on electric fans to cool its atmosphere, and he eats his lunch from dishes fashioned in potteries which have adopted air conditioning as a valuable aid in perfecting the manufacture of ceramics.

"Better bread for better eating through air conditioning" might be an effective slogan for modern bakeries, as bakers nowadays agree that air conditioning of their plants is economy not only because the exact temperature can be

maintained that is required to raise a batch of dough properly but also because several more loaves of bread may be obtained from a barrel of flour under this method. The glass of beer you drain and the chewing gum you chew come under the influence of the science in question at some stage of their production, and to go a bit further back, even the yeast with which the beer is fermented probably came from a yeast factory where the air was scientifically washed to rid it of all microscopic organisms so detrimental to yeast manufacture.

You may drive an automobile or pilot an airplane constructed within the scope of the influence of controlled temperature and humidity. Better yet, you may be one of those fortunate persons possessing the luxury of an air conditioned yacht. If not, you have probably at one time or another boarded a steamer with air conditioned cabins, because steamship companies have come to recognize what attractions a comfortable temperature in cabins and lounges offers to the ocean traveler.

WHEN you swallow a medicinal pill or munch a chocolate candy, remember that old methods of uncertain drying used for soft and hard sugar coatings have been abandoned for methods that assure a perfect quality product free from stickiness or the whitish bloom that chocolates formerly acquired particularly in the summer. The radio broadcast comes to you often from a studio that is air conditioned, and the musical accompaniment of your favorite entertainer may be played on a piano the parts of which were cut and fashioned, for security from shrinkage, in a factory where the air circulation and seasoning properties of the atmosphere were kept level by thermostatic control. Ten to one, the leather of your shoes and the worsted of your suit were processed in air conditioned factories, for even in the year 1919, nearly 200 textile plants were equipped with such apparatus. The fibers of the cotton are so prone to absorb moisture from the atmosphere that the weight of a hank may increase as much as 15 per cent in a day's time. As in cotton, so are the fibers of both wool and silk likely to overstretch when too moist and to break from brittleness when too dry. Rubber requires the proper percentage of moisture in the atmosphere to process it satisfactorily, and the delicate gelatinous coating of moving picture films likewise requires a drying chamber where the humidity is carefully gaged and the dust particles are cleansed from the air. The General Electric Company profits immeasurably from a system that allows long and accurate experiments to be conducted under standardized atmospheric control.

Air conditioning is not a new science by any means, though it has evolved within the memory of many of us. Even as long ago as the World War the crystallizing room of the United States Ammonium Nitrate Plant was operated under air cooled conditions. To delve back into industrial history, it would appear that Joseph McCreery of Toledo, Ohio, was first to initiate the type of air washer now generally used, and for his invention two patents were granted in July 1897. Stuart Cramer of Charlotte, N. C., and W. H. Carrier of Buffalo, N. Y., acting independently, in 1906 obtained patents on their automatic methods of regulating humidity. It is doubtful that either of these men foresaw at that time the far-flung influence of their embryonic patent or guessed that air conditioning would come to play so definite and valuable a part in every walk of life from prince to pauper, from schoolroom to theater in a mere score and a half of years. Truly, this inventive process runs the gamut from the cradle to the grave, an undertaker having equipped his establishment with air regulating apparatus.

The physical comfort which air conditioning affords the individual in normal health is perhaps eclipsed by that supplied the sufferer confined to the hospital cot. This is a phase of regulated temperature and humidity to be considered and perfected through continued research for the good of the many, and its perfection is well along its way. The oldest charity hospital in the country is yet modern enough to install such new-fangled equipment. This is the institution conducted by the Daughters of Charity of St. Vincent de Paul, New Orleans. The new main building now under construction will be air conditioned, as will be the new Hudson County Tuberculosis Hospital at Jersey City, N. J., a skyscraper unit of the Jersey City Medical Center.

A MAJOR factor in favor of installing air conditioning in hospitals is its value in counteracting the debilitating effect of heat waves on the metabolism of the patient. It is an established fact that following certain types of operations where infection is most likely, a lowering of the energy level of the body and the metabolic tone in general tends to offer sympathetic ground to infection. The patient is removed from a heated operating room to a bedroom which cannot be cooled by electric fans because of the susceptibility to pneumonia always attendant on an operation. He must consequently divide his resistance to infection with resistance to the depressing effect of heat and must fight much longer and harder before recovery is attained than does the patient who may enjoy a temperature of a more beneficial degree.

This is particularly true in the southern section of the United States, the Orient and the tropics. The excessive humidity of moist, hot

By S. R. WINTERS

climates tends to produce an extremely enervating effect on bodily vigor, lessening the ability to meet physical emergencies satisfactorily. Curiously the fatality rate for appendicitis is much higher in the Gulf states than it is in the Canadian North. Therefore it is recommended that hospitalization in the warmer climates should entail controlled temperature. Consequently the values of air conditioning are emphasized. A temperature of approximately 15 degrees (F.) lower than the current outdoor temperature is supposed to be the most salutary.

THERE is a theory that sudden barometric drops have much to do with outbreaks of appendicitis as well as with suicides and homicides. Marked fluctuations in the weather apparently go hand in hand with mental depression and disturbances of the supersensitive bodily tissues. When the barometric pressure takes a rapid drop the tissues of the body attract and absorb two or three pounds of water in the course of a day. Glandular secretions accordingly diminish, and thus the bodily functions, especially the digestive system, are affected. Scientists volunteer that resistance to invasion of bacteria may be coincident with this imbibition of water. The convalescent in the hospital would derive protection from such supposedly irritating factors if the proper air circulating and washing equipment were introduced, and recovery would accordingly be hastened.

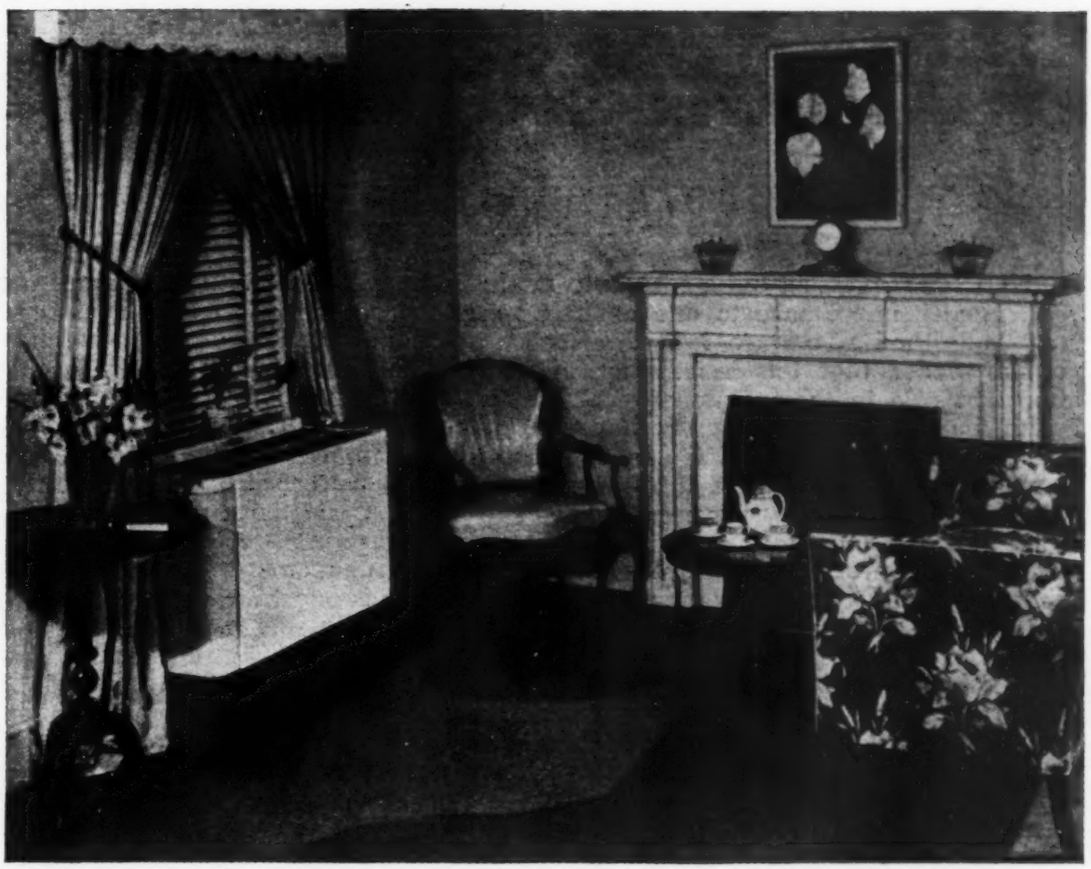
To all appearances the common cold is acquired by such diversifications as those just outlined. Once given footing, infection is of course readily established, and more serious conditions often result. Tuberculosis has a high death rate in barometrically unsettled regions. Doesn't it stand to reason, then, that treatment in sanatoriums administered under thermostatically controlled temperature would necessarily offer more ideal environment? Perhaps a mean temperature of 65 F. for daytime and 35 F. for sleeping hours would be advisable.

Dr. Clarence A. Mills, professor of experimental medicine, University of Cincinnati, has recently made the suggestion regarding prevention of nervous exhaustion that the hypertensive or overdynamic persons who need but cannot easily indulge in tropic recuperation might find the necessary relaxation and prevention of the eventual onset of serious mental and physical disorders, if they were housed in a sanatorium gaged to the temperature equaling tropical weather.

Sclerosis is another of the inflictions that is pleasantly affected by relaxation of the sort experienced in summer warmth. Within the present decade important steps have been accomplished in caring for asthmatic and hay fever sufferers by subjecting them to regulated indoor temperature, washed free of irritating matter. When the humidifiers of air conditioning apparatus are cleaned an almost unbelievable amount of dirt accumulated therein furnishes indisputable proof of the immense quantities of foreign substance the lungs must receive in a day, for the average person inhales approximately 25 cubic inches of air eighteen times a minute, or about 28 pounds of air in twenty-four hours. It is easy to visualize the proportionate number of harmful bacteria that may be attached to these atmospheric dust particles. This fact in itself offers a broad base for conclusive argument in favor of the scientific conditioning of schoolrooms as well as hospitals, the recirculated air being washed of soluble gases and impure substances.

In the treatment of diseases by conditions independent of external weather, there are certain instances in which the remedy may be worse than the cure unless intelligently handled. The remark is often heard: "I caught a dreadful cold sitting in that air cooled theater." Here is an example of how improperly regulated machinery may cause discomfort if nothing worse. It is not because the theater is air conditioned that one contracts a cold but because the cooling apparatus is not well handled. Too rapid reduction of body heat is detrimental to the system for the reason that it may lead to overchilling of the body or it may encourage metabolic exhaustion. Proper regulation of heat loss, however, encourages a stimulated metabolism and heat production. This is a pertinent factor in the treatment of tuberculosis. Shock of surgical operations and their accompanying anesthetics may bring about such chilling because of the derangements produced in the heat mechanism of the body. Postoperative fevers sometimes ensue as well. To put the patient in the best possible condition for a major operation it would seem that the logical preparation would include preoperative hospitalization for several days in a properly regulated temperature. This problem has not yet been worked out, but various ideas for its solution are being entertained by workers striving along these lines.

A HYPOTHESIS advanced by medical men is that radiant heat from low temperature sources may offer the desired solution for proper air conditioning, with the level maintained somewhere at about 50 F. instead of the 75 F. commonly sought. Emerging from a too warm room into the cold outdoor air of winter subjects the system to a definite shock as the cold air, low in water content, must be warmed to body temperature and saturated with water vapor after its reception through the chilled mucous lining of the respiratory tract. The mucous membrane consequently loses considerable heat in the process of vaporizing the inhaled air. In an indoor environment where proportionately high water content is maintained in the atmosphere,



ONE-ROOM AIR CONDITIONING UNITS ARE NOW AVAILABLE WHICH MAY BE PLACED ATTRACTIVELY IN ANY INTERIOR.

the linings of the breathing tract suffer little heat loss.

Man in summer automatically combats heat with perspiration, but there are occasions when the humidity is sufficiently intense to repel perspiration because the atmosphere in itself is so saturated with water as to have no further capacity for absorption. Then man experiences much greater discomfort than when normal ejection from the pores relieves his temperature. When the atmosphere becomes contrastingly dry, suffering of another order ensues, and because of the drying up of the mucous membrane lining the respiratory passages, colds and grip germs get a foothold and flourish in profusion.

To cool a room in summer a current of warm air from the outdoors is sucked in and "washed" in a spray of cold water or chilled by means of a refrigeration coil or an ice filled apparatus. Any excess moisture is simultaneously removed. Before the chilled air is released in circulation the air is blended with warm air so that it may not be too cold for comfort. Of course, with the perfected methods now in use, any desired temperature or humidity is possible at any time. In winter weather the reverse of the foregoing method is practiced, and cold air is drawn over a spray of hot water to furnish the required humidity. Summer and winter air are disseminated through the same ducts by the same forced circulation fans.

Various measures for air conditioning hospitals have been presented, but the expense of installing such apparatus has so far been a great drawback. Those buildings in the process of construction can, naturally, be equipped with ducts and the central installation with comparatively less trouble and expense; but if the hospital is an old building and the installation therefore complicated, the current prices tend to discourage the acquisition of air conditioning equipment. For example, the recently added executive wing of the White House was air conditioned without difficulty, but the cost of undertaking such an operation in the bedroom of President Roosevelt, a request which is included in the currently enacted deficency bill, will require an expenditure of $10,000. To air condition the entire White House some $150,000 to $250,000 would be required. The recently passed deficiency bill also carries a supplementary fund of $1,642,000 to complete the job already begun of air conditioning the Capitol, the Senate office and the old and new House office buildings. This will bring the entire cost to more than $4,000,000. *(Continued on page 719)*

WHAT DOES THE HEART MURMUR

By SAMUEL H. AVERBUCK

ALTHOUGH it is not quite correct to ascribe greater importance to one organ of the body than to another, it is nevertheless a popular belief that the heart plays a more important rôle in the maintenance of normal health than do other organs. Perhaps the layman should not be blamed too much for this emphasis on the heart when it is recalled that William Harvey, who discovered blood circulation as it is known today, said as he dedicated his description of the course of blood flow, "The heart of animals is the foundation of their life—that upon which all growth depends, from which all power proceeds." Since Harvey's monumental work in 1628, great advances in physiology, the science that attempts to define the way in which the body processes go on, have taught us that all organs of the body are interrelated and that the heart is as dependent for its normal action on the rest of the body as the other organs of the body are dependent on it. So to physicians, all parts of the body are equally important.

Yet whatever the position doctors ascribe to the heart, it is nevertheless true that in the popular mind the good heart is synonymous with good health. Therefore the suggestion that one's heart is not perfect becomes extremely important because of the profound influence the idea of a weak heart has on individuals. Terms innocently used by physicians are remembered by patients who with an incomplete understanding exaggerate and magnify what has been said until they become convinced that they possess a serious heart affliction predisposing them to either sudden death or chronic invalidism. The term most commonly misunderstood and misinterpreted is "heart murmur," which to the general public always signifies heart disease.

The heart is a hollow muscular organ divided into four chambers. These chambers, or compartments, are separated from each other by membranous valves which open with each contraction of the heart and close again when the heart relaxes. With the stethoscope the trained physician can hear the sounds which are made by the contractions of the heart muscle and the opening and closing of the heart valves. Because the membranes which make up the valves in normal hearts are smooth and elastic there is no resistance to the flow of blood through these valves and usually no sounds are set up during this period of heart action. However, certain alterations either in the blood flowing through the heart, in the heart valves themselves or in the tissues around the valves produce new sounds which can be heard with the stethoscope. The name "murmur" has been given to such new sounds. Actually, they bear no resemblance to a murmur. Usually they are whistling, scraping, piping or rumbling noises which have certain characteristics, depending on the valve of origin and the cause of the valve abnormality.

Murmurs are of two types: the organic and the functional or accidental. An organic murmur is one which is caused by some structural change in the heart. Often children are born with defects in the structure of their hearts which give rise to murmurs. But the capacity of these hearts for doing work is only moderately reduced, and individuals with this type of heart disease can live a normal span. Recently a wonderful example of this came to light in a medical report by Dr. Paul D. White of Boston, which told how Henry Gilbert, a famous American composer, lived until 60 years of age with congenital or inborn heart disease. Fortunately this type of heart trouble is rare, for nothing can be done to anticipate or prevent it.

By far the most common cause of valvular changes that give rise to murmurs is the disease known as rheumatic fever, or articular rheumatism. Usually young people are attacked, the condition manifesting itself either as a disease of the joints or in muscular or growing pains or St. Vitus' dance. Sometimes the disease gains entrance to the body through repeated tonsil infections. Crowded, damp, unhygienic environment and poor nutrition predispose to this serious illness. The heart is often involved, with swelling, roughening, stiffening and shriveling of the valve leaflets. As a result of these changes the heart valves can neither open completely nor close perfectly, and murmurs are produced. Other causes of organic heart murmurs are the organic alterations produced by syphilis and by acute infectious diseases, such as scarlet fever.

WHETHER the cause of the structural change in the heart giving rise to these new sounds called murmurs is inborn or whether it is the result of a rheumatic or other type of infection, the effect is the same. The heart works somewhat less efficiently, and certain chambers of the heart enlarge, depending on the valve affected. Such alterations can be clearly seen in the x-ray or fluoroscopic examination of the heart and,

SAY

way

more important than the murmurs themsc... are the definite and conclusive evidence ... organic nature of the heart murmurs. It ... that experienced physicians can usuall... r-mine the meaning of murmurs by th... ce in the cycle of the heart sounds, ... eir quality and duration and radiation, a... the patient's history and previous illne... But often final doubts about a case can ... ttled only by determining the presence or ... ence of heart enlargement by fluorosco... xami-nation. Patients with heart murm... hould always be examined under the ... scope screen.

Fully 50 per cent of the murmur... d over the heart do not signify organic d... of the heart valves or damaged hearts. It is important to recognize this functional, accidental or unimportant type of murmur, for ... without significance and does not requi... recautions or special regimen on th... of the patient. The cause of this type of heart murmur is not definitely known. Many of these murmurs represent simply the noise made by the contracting heart as it hits the chest wall. It is agreed, however, that no disease can be found in such hearts and that there is never any diminution in the ability of the heart to perform all activities and exertions. Fluoroscopic examination does not reveal cardiac enlargement.

Usually these accidental murmurs are discovered first during a routine physical examination or perhaps when the patient is being seen by a physician during some minor febrile illness. The physician may mention his observation without going into detail about the significance of the murmur. Perhaps he will fail to emphasize that murmurs often appear in normal hearts during acute illnesses, especially if the patient is anemic, and that after the subsidence of the illness the murmurs disappear. But to the patient and to the patient's family, murmurs mean heart disease. Well meaning friends

make suggestions; erroneous information is obtained from many persons, and in the light of conflicting opinion and advice the murmur assumes an unwarranted and magnified importance. In the meantime, in spite of assurances from a capable physician that no heart disease is present, the patient, just to be safe, is kept on restricted activity; a state of mental invalidism is induced, making the subject fearful, timorous, apprehensive and afraid. There is a loss of that free expression of physical activity which is so important in the maintenance of good health. When children are restrained from normal activity, as so often happens, a retardation of their physical development occurs. During the war many men with functional heart murmurs were barred from active service, and frequently college men are kept out of competitive athletics because they have a heart murmur. If no attempt is made to determine the real meaning of the extra heart sound an individual's normal life may be seriously and needlessly interfered with.

If organic heart disease is present, the patient's regimen must be ordered so that no excessive work demands are made on the heart. Additional infections must be prevented, and great attention must be paid to the maintenance of general health. Evidences of failing heart action must be recognized early and treated so that the reserve power of the heart can be preserved. There is no reason for a pessimistic outlook for individuals who have organic cardiac murmurs. The murmurs themselves in such cases do not tell anything about the capacity of the heart to do work. Regardless of the number and intensity of murmurs, the health of the heart is directly related to the condition of its muscle. A good heart muscle means a good heart. This is well exemplified in older people. Often they have no murmurs whatever; yet because the muscles of their hearts do not receive sufficient nourishment through their hardened and narrowed arteries, the heart fails in its job of maintaining an adequate circulation. On the other hand, it is not an infrequent experience to meet patients with many heart murmurs who, because they were not aware of this fact, never restricted their activity in any way and yet never had a symptom of heart muscle weakness.

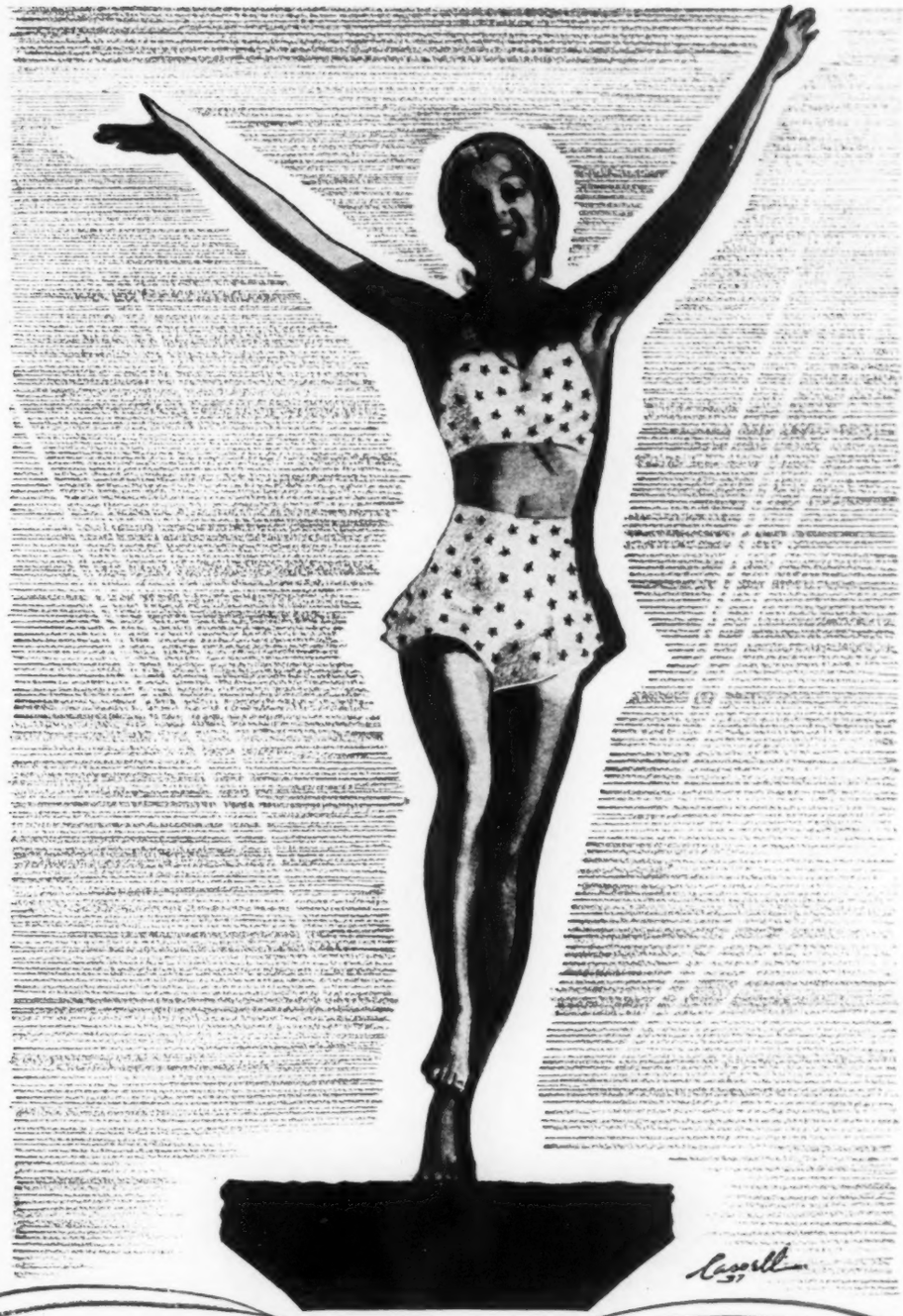
Murmurs, even if of organic origin, are merely indicators of what has occurred to the heart valves. If there has been muscle damage by the same infection which caused the valve change, the patient will have such symptoms as breathlessness and palpitation on even mild exertion. If the usual daily physical activities can be executed without difficulty, it is a fairly safe assumption that the heart has not suffered unusual damage even though murmurs are present. It is not an uncommon experience for physicians to see patients who have organic murmurs live to advanced ages, after having pursued careful and conservative but none the less fruitful and happy lives.

Perhaps it will be asked why insurance companies refuse to insure applicants with heart murmurs. Because it is true that a certain number of persons with heart murmurs have organic heart disease, insurance companies, for the sake of economy, group all subjects with heart murmurs together and bar them from the benefits of insurance. Insurance companies are interested in large numbers and not in individuals. But not all patients with murmurs can be grouped together, nor can murmurs be considered except individually. Although there may be a justification for such grouping from the standpoint of efficiency in business, from the medical point of view careful and complete study of every subject presenting heart murmurs is necessary in order to determine whether the heart is really damaged and to what extent. One can insist on this more complete examination, which should include fluoroscopy and tests of the heart's ability to do work, before accepting an unfavorable decision from the insurance company.

It must be made clear that not all heart murmurs have an identical significance. There are some, the organic type, which arise from previously damaged valves in hearts which were the seat of infection at another time. Such murmurs have certain characteristics which usually identify them as having their origin in valves changed by inflammatory disease. Their quality, persistence, location and radiation help to determine their meaning.

More important is evidence that the heart is enlarged and that there is a limitation of the ability of the heart to work without the appearance of such distressing symptoms as shortness of breath and palpitation. Such hearts must be spared unusual or sudden burdens; infections must be avoided and energy conserved. With close observation of such simple measures the outlook for such individuals is good. It is important to separate such murmurs from the accidental, unimportant or functional heart murmurs which do not indicate damaged heart valves or weakened hearts. There are no changes in the size or shape of these hearts, and they are capable of fulfilling all the demands placed on the normal organ. Under no circumstances should such individuals with functional murmurs be placed on restricted physical regimens, nor should they be made to feel that they are inferior physically or that they are not able to live normal active lives.

And so the question, "What does the heart murmur say?" can be answered briefly. Although heart murmurs often make much sound, they frequently say very little.



The Springboard

This springboard knew the stanch step of my daughter,
From off its hemp wrapped end she learned to shoot
With serious laughter and with archèd foot,
With crimson cap between the sky and water.

This springboard knew her first when she was learning,
With arms extended and with sun drenched thigh,
With crimson cap unquenched against the sky,
With crimson cap beneath the water burning.

—MARION STROBEL

Henry M. Mayer

It's Ice Cream

AND THERE'S SAUCE FOR IT

By E. M. GERAGHTY

AMONG MY happy memories is one of a late afternoon in midsummer when we were seated on a neighbor's terrace. The almost drugging sweetness of the mingled odors of garden heliotrope, nicotiana and honeysuckle was wafted along on the lazy breezes. Pastel hued flowers made harmonizing color notes along garden paths leading to the nearby wooded ravine. The drip, drip of water in a tiny pool was soothing and musical and the hum of motors on the distant highway made our isolation in the midst of beauty all the more satisfying.

As the shadows lengthened and the summer sun began to dip behind the tree fringed western horizon the hostess said, "Well, I guess it's time to have our supper. Come on, Jean, and help Mother." Soon Jean, the 3 year old daughter, came skipping gaily down the garden path. Her face simply beaming, she came over to me, put her hand on my knee and said, "It's ice cweam, and there's sauce for it." Ever since then, whenever I see genuine delight over anything I am reminded of the sincere tribute connoted by the shining eyes and happy laughter of that maid of 3.

Ice cream today deserves this tribute and every bit of the solid popularity which it enjoys. No matter how many new desserts are thought up, no matter how much we increase the scope of our food offerings, ice cream still stays at the top of the list of season's best sellers among desserts. And no matter how often we have it we never tire of it. The popularity of it is so definitely accepted that it is not necessary to dwell on this phase. Other points of interest are its food value, its place in the diet and new ways to serve it or to dress it up for special occasions.

The food value of ice cream is high: over 200 calories for an average serving without any sauce. And these calories carry values in the way of protein and calcium. It's a perfect way to get the youngsters to take their daily quota of milk. If you need to add weight, use ice cream freely, putting in extra calories by adding sauces or nuts or fruits. And if you are reducing you may still have ice cream in your diet because it supplies the much needed protein and calcium. This dessert is a great boon to the "dieter" who takes lunches in a restaurant or cafeteria, for it's always sure to be on the menu every day in the majority of places.

Here's a good luncheon menu for a would-be-plumper which is easy to secure in a restaurant.

Vegetable Soup
Saltines
Bacon and Entire Wheat Bread Sandwich
Fresh Fruit Salad with French Dressing
Glass of Milk
Vanilla Ice Cream with Chocolate Sauce
Sponge Cake

But if you're a would-be-slimmer, here's your menu.

Vegetable Soup
Fresh Fruit Salad on Lettuce
Glass of Milk
Vanilla Ice Cream

So many stores offer ice cream of creamy, smooth texture and excellent quality and in a great variety of flavors that it is an easy matter for you to keep plenty on hand in the freezing section of your refrigerator. You will always be prepared for extra guests at mealtime or for "refreshments" when some of the crowd drop in for a chat or a few rounds of bridge, and it's the best after-school lunch you could give to the children.

The plain ice cream is delicious. It gives us a chance to savor every bit of the delicate flavor and to appreciate the fine textures; but the time comes when we wish to dress it up a bit. So here are some suggestions for you.

Maple Cream Sauce

1 cupful maple syrup
½ cupful cream

Heat syrup and cream to the soft ball stage (232 F.). Beat 1 minute, and allow to cool.

Coffee Sauce

1 cupful freshly made strong coffee
1 cupful sugar
Pinch of salt
1 teaspoonful vanilla

Cook coffee and sugar together for 5 minutes. Cool. Add salt and vanilla.

Maple Sauce

Maple syrup
Nut meats

Cook maple syrup to 224 F. Cool. Pour over ice cream, and then sprinkle with nut meats.

Mint Marshmallow Sauce

½ cupful sugar
¼ cupful water
1 egg white
8 marshmallows, cut into small pieces
Green coloring
Oil of peppermint

Boil sugar and water together for 3 minutes. Add marshmallows. Pour this mixture gradually on stiffly beaten egg white, beating constantly. Color light green, and flavor with 1 drop of oil of peppermint.

Fruit Sauce

Orangettes or tangerine sections
Seedless grapes
Banana quarters
Kumquat slices
Pineapple sauce

Mix fruit together in enough pineapple sauce to be of the consistency you like. Chill well.

Mint Meringue Ball

Vanilla ice cream
Meringues, small
Mint syrup
Mint cordials

Scoop out ice cream in the shape of a ball. Place on serving plate, and press meringue on each side. Pour mint syrup over, and place cordials on top.

Chocolate Sauce

3 squares bitter chocolate
¼ cupful water
1 cupful sugar
½ cupful white corn syrup
1 cupful evaporated milk
1 teaspoonful vanilla

Melt chocolate over hot water. Add water slowly, stirring until smooth. Add sugar and syrup. Boil to 234 F. (very soft ball when tested in cold water). Remove from fire, and add milk and vanilla.

Butterscotch Sauce

1½ cupfuls brown sugar
⅔ cupful corn syrup
½ cupful water
¼ cupful butter
⅔ cupful evaporated milk

Boil sugar, syrup, water and butter to a thick syrup (236 F.). Cool, and beat in the evaporated milk.

Caramel Cream Sauce

1¾ cupfuls granulated sugar
¾ cupful maple syrup
¼ cupful corn syrup
1 pint whipping cream
¾ teaspoonful vanilla

Mix sugars, corn syrup and one cupful of the cream together. Cook over flame until quite thick. Remove from flame, and cool. When thoroughly cooled, fold in rest of cream, which has been beaten until thick. Add vanilla.

Marshmallow Sauce

1 cupful sugar
½ cupful water
18 marshmallows cut fine
2 egg whites

Boil sugar and water together for about 5 minutes, until a thick syrup is formed. Add the cut marshmallows, and pour at once over stiffly beaten egg whites.

Hot Fudge Sauce

1 tablespoonful butter
1 ounce unsweetened chocolate
⅓ cupful boiling water
1 cupful granulated sugar
2 tablespoonfuls light corn syrup
½ teaspoonful vanilla
⅛ teaspoonful salt

Melt butter, and add chocolate. Stir over low heat until melted. Add boiling water, slowly, stirring constantly. Bring to boiling point. Add sugar and corn syrup, stirring until dissolved. Cook 5 minutes. Add vanilla and salt. Serve hot.

Health Sundae

Chopped dried figs
Chopped dates
Coarsely chopped nut meats
Maple syrup

Mix figs, dates and nut meats with enough maple syrup to make sauce of proper consistency. Chill.

Fresh Peach Melba

Large unpeeled peaches
Fruit sugar
Vanilla ice cream

Wipe peaches to remove fuzz. Cut in halves crosswise, and remove pits. Dust with fruit sugar. Put scoop of ice cream in center of peach. Garnish with nasturtiums or with violets.

Ginger Sauce

Preserved ginger in syrup
Simple syrup (made as in preceding recipe)

Cut ginger into small pieces. Add 1 cupful ginger syrup to 1 cupful simple syrup. Add ginger, and chill.

Pineapple Sauce

1 cupful pineapple juice
1 cupful sugar
½ cupful finely crushed pineapple
Grated rind of 1 orange

Cook pineapple juice and sugar for 5 minutes. Cool. Add finely crushed pineapple and the grated orange rind. Chill.

Orange Sauce

1 cupful sugar
1 cupful water
2 large California oranges

Cook sugar and water together for 5 minutes. Remove peel from oranges. Scrape out as much white membrane as possible from inside of rind, and cut rind in very narrow strips. Pour hot syrup on rind. Cut orange pulp into small pieces, removing all seeds and as much membrane as possible. When syrup is cool, add orange pulp. Chill.

Honey Nut Sauce

Strained honey
Pecan meats (salted)

Pour honey over ice cream. Sprinkle with salted pecan meats.

Maple Fudge Sauce

2 cupfuls maple syrup
2 tablespoonfuls butter

Boil syrup and butter to 232 F. Cool slightly.

Chocolate Mint Sauce

Chocolate mint patties

Melt patties in top of double boiler. Pour over ice cream.

Chocolate Nut Sauce

Chocolate nut bars

Melt chocolate nut bars over water. Pour over ice cream.

Butterscotch Patty Sauce

Butterscotch candies
Water

Put butterscotch candies into a small amount of hot water. Cook over flame until candy is melted. Cool. Pour over ice cream.

Ginger Float

Vanilla ice cream
Ginger ale

Put a scoop of ice cream in the bottom of a parfait glass. Add chilled ginger ale. Serve at once.

Holiday Sauce

Guava jelly
Pistachio nuts

Chop jelly in a bowl set in warm water. Pour jelly over ice cream, and sprinkle with nuts.

Peanut Brittle Sauce

Peanut brittle
Water

Put peanut brittle in a small amount of hot water. Cook over flame until candy is melted. Cool. Pour over ice cream.

Baked Alaska

Loaf of sponge cake
Ice cream
Meringue
Melted bitter chocolate

Cut out inside of cake leaving a wall one-half inch thick all around. Fill center with ice cream, packing it down well with a hot spoon. Cover top and sides with meringue. Place cake on a board, and place in a hot oven (400 F.) just long enough to brown the meringue. Now remove from oven, and pour melted chocolate over top allowing it to run down sides. Send to table on a platter. Cut in slices.

French Marron Sauce

French marrons in syrup
Sugar
Water

Cut marrons into small pieces. Make a simple syrup by boiling 1 cupful sugar and 1 cupful water for 5 minutes. Cool. Now add 1 cupful marron syrup to 1 cupful simple syrup. Add marrons and chill. This is especially good on coffee ice cream.

Vanilla Ice Cream

1 quart cream
¾ cupful sugar
Few grains salt
1½ tablespoonfuls vanilla

Scald cream. Add sugar and salt, and stir until dissolved. Cool. Add vanilla. Freeze.

Chocolate Ice Cream

1 quart cream
1½ squares unsweetened chocolate
⅔ cupful milk
¾ cupful sugar
Few grains salt
1½ tablespoonfuls vanilla

Scald cream, chocolate and milk together. Add sugar and salt, and stir until dissolved. Cool, and add vanilla. Freeze.

Ice Cream Sandwich

Freshly baked sheet of jelly roll
Round container of ice cream
Sliced peaches, or strawberries and fresh pineapple
Sugar

Roll jelly roll sheet as soon as it comes from oven, and leave until it is cold. When ready to serve dessert, unroll, and place ice cream in center; then roll up again. Place in serving platter, and put sweetened fruit on both sides. Cut in slices, and serve with some of the fruit.

And for a very simple service, scoop out ice cream in the shape of a ball and try one of the following "dressings":

Roll in almonds which are blanched, shredded and browned.

Roll in finely ground macaroon crumbs.

Roll in fresh grated coconut.

Roll in chocolate shot.

Cut canned peaches into small slices, and pour over ice cream. Or use the frozen peaches on ice cream.

Pour a few spoonfuls of raspberry jam or strawberry preserves over vanilla ice cream.

Mix fresh pineapple and strawberries with just a bit of sugar to make a perfect topping for this favorite dessert.

And here are some points to remember when you do your own freezing:

Preparation for Freezing.—Put dasher in can, and fit freezer crank. Fasten clamps down well, and give dasher a few turns to make sure it is working perfectly before you put ice and salt around can. Again give it a few turns after you have packed the ice and salt and before you pour mixture into can.

Proportions of Salt to Ice.—When a fine-grained texture is desired use one part of salt to three of ice; when a coarse or granular consistency is required, as for frappé, use equal parts of salt and ice.

How to Freeze and Pack.—Mixtures increase in bulk during freezing; therefore fill the can only to three fourths of its capacity. Surround the can an inch higher than its contents with alternate layers of ice and salt. The smaller the lumps of ice, the quicker they will be affected by the salt, and consequently the more rapidly the mixture in the can will freeze. It will also freeze more quickly if the freezer crank is turned slowly until the mixture becomes a mush, as it is exposed to the cold longer at a time.

During the freezing, add more ice and salt if necessary, but do not draw off the water unless there is danger that it will get into the can. When the mixture is frozen draw off the water; remove the dasher; pack the mixture solidly by pressing it down with a spoon; replace the cover; insert a cork in the dasher hole; pack ice and salt around and over the can, using one part of salt to four of ice; cover the whole with thick paper or sacking, and let stand in a cold place until ready to serve.

SYMPATHETIC INFLAMMATION

Century Photo

"SYMPATHETIC inflammation is that much dreaded condition in which serious inflammation attacks the sound eye after injury to the other eye," as Parsons defines it.

When one eye receives a severe injury, especially a wound which penetrates the eyeball or one in which a foreign body such as a piece of metal or shot enters the interior of the eye, a condition exists which may give rise in the other eye to a destructive inflammation with loss of vision. It is therefore necessary that when such an injury occurs the advice of an eye physician be obtained at once so that immediate measures may be taken to try to prevent the occurrence of this dreaded disease, sympathetic ophthalmia.

If the injury has damaged the eye so badly that it is evident that no sight can possibly be preserved, the eye should be removed at once. It is far better to be sure of having one good eye than to risk losing the sight of both in order to save a useless eye. If there is a possibility that treatment may save the injured eye with useful vision the oculist will of course make every effort to do so; but if the inflammation resulting from the injury lasts for several weeks the danger to the other eye is so great that consent should be given to have the injured eye removed, especially if there is little hope of this eye being saved with useful vision.

If the x-ray picture shows that there is inside the eye a foreign body which cannot be extracted, it is safer to have the eye removed, if the other eye has good sight.

If, while an injured eye is being treated, the other eye tears and becomes sensitive to light or if the sight grows dim while reading, this should be reported to the oculist at once as these are early signs that the eye is becoming affected.

Do not wait for pain in the uninjured eye as the sympathetic disease may progress without pain to a stage at which it is no longer possible to effect a cure. That is one of the dangers, as pain is a symptom for which relief is sought and its absence lures the patient into believing that nothing is wrong with the uninjured eye. No specific remedy is known. Only by entering a hospital at once is there any hope of saving the eye.

Parents should know that any injury which may produce sympathetic inflammation at any age is much more likely to produce it in a child.

Sympathetic inflammation following operations is known to be particularly destructive. Disappointing and tragic as it is to leave a hospital without an eye to which you had expected to have the sight restored, it should not stand in the way of having the eye removed if the surgeon so advises.

The way to prevent sympathetic inflammation is to prevent injury to the eye. Do not have scissors, pocket knives or other sharp and pointed objects where children can lay their hands on them. Many eyes are lost by permitting children to use firearms, air rifles and other explosives, as is so commonly the practice in celebrating Independence Day. Persons engaged in occupations in which there is danger to the eye from flying chips or sparks should wear goggles or protective shields when at work.

BY WILLIAM ZENTMAYER

DIABETIC GANGRENE

By A. OWEN PENNEY

GANGRENE is one of the most dreaded complications of diabetes mellitus. Even in a patient whose regimen of diet and insulin is rigidly followed, such a lesion may occur at any time, and a fatal termination is a specter that always hovers close by. In "Pathology of Diabetes Mellitus," Dr. Shields Warren cites 300 fatal cases, in 55 of which gangrene developed and in 27 of which gangrene was the primary fatal lesion.

"In a series of thirty-six legs, seventeen toes and one arm," again says Dr. Warren, "amputated for gangrene during a little over one year, all but five legs were from diabetic patients. In eight of the diabetic patients more than one amputation was performed."

In their book, "Diabetic Surgery," Drs. L. S. McKittrick and H. F. Root report: "One hundred and sixty-three, or 4.08 per cent, of 4066 diabetic admissions to New England Deaconess Hospital between January 1, 1927 and January 1, 1928, were the result of gangrene or infection of a lower extremity of sufficient severity to require operation. During this same period 24.2 per cent of the diabetic deaths were from this group of 163 patients."

It is now freely admitted that gangrene is as preventable as coma if proper supervision is maintained over the lower extremities, where the vast majority of such lesions begin. Dr. Elliott P. Joslin, pioneer in many phases of diabetes, long ago became aware of the value of prophylactic treatment of the feet and was one of the first to add a podiatrist to his staff. Today, podiatrists are practicing in the diabetic clinics of more than twenty-five hospitals and have given a total of as high as 10,000 treatments in a single year. In some of these clinics, amputations for gangrene have decreased more than 50 per cent. In at least two of these clinics, not a single case of gangrene in a regular patient has developed since the podiatrist was appointed three years ago. What this means to the patient in the saving of limb and life and what it means to the hospital from the economic point of view can only be guessed. The minimum cost per hospital day, figuring on community chest allowances, is $4. If surgical care, dressings and other services are added, the cost mounts proportionately higher. In "Treatment of Diabetes Mellitus," Dr. Joslin says that 30 cents worth of insulin will save a hospital the expense of a full patient hospital day. With equal truth it may be said that the weekly visit of the podiatrist to the diabetic foot clinic saves many patient hospital days.

These results are obtained first by diligently educating the patient in the care of his own feet and then by the prophylactic treatment given by the podiatrist. When a new patient is admitted to the clinic he receives meticulous instructions as to cleanliness, selection of foot wear, care of the skin, trimming of nails and many other details. Usually this is all contained in a printed leaflet which is given the patient.

The procedure in the clinic is as follows: After the patient has been seen by the physician and has had his general condition checked, and diet and insulin regulated, he is referred to the podiatrist, who makes a thorough examination for callosities, ingrown nails, fungus infections and all the other lesions that are peculiar to the feet and then administers the appropriate treatment. When the patient comes to the clinic regularly and obeys orders, all these disturbances are kept under control and there is no temptation to indulge in dangerous home treatment. In the event that gangrene does develop, the podiatrist, with his specialized knowledge and methods of treatment, is still able to keep most cases out of the wards. More than that, he can actually keep the patient in an ambulatory condition, thus preserving the patient's earning power.

As in all other departments of diabetic management the podiatrist has his own chart on which are recorded in detail all the necessary facts pertaining to the lower extremities. So complete is the examination that it often brings to light symptoms that the physician in charge might easily overlook, merely because he has no reason to search for them. Such symptoms may indicate orthopedic, dermatologic or circulatory disturbances. If the condition lies outside the podiatrist's field he will promptly refer it to the proper department.

The rise of the podiatrist to this position of importance is not difficult to understand when one recalls the statement that most cases of diabetic gangrene start on the foot. A neglected corn, a corn cut too close, a corn treated with a plaster containing salicylic acid, an ingrown nail, a blister or an abrasion improperly cared for—any of these lesions, so often disregarded, may lead to the diabetic ulcer or gangrene.

It should be remembered, too, that a slowly healing ulcer on the foot is often the first danger signal of diabetes. The patient may have had the disease for years and have been blissfully ignorant of it until the condition of his foot compels him to seek a podiatrist. The latter's familiarity with the foot symptoms of organic disease instantly suggests the probable cause of the ulcer, and in private practice his first step is to refer the sufferer to his physician for examination and systemic treatment.

THE TRUTH ABOUT ACIDOSIS

By James A. Tobey

MUCH HAS been heard about acidosis in recent years, and much that has been heard about it has been wrong. The term is a favorite one with the food faddists, whose glib but erratic statements would lead one to believe that acidosis, or "acid blood," is a common ailment and that it is usually caused by an improper diet.

Actually, nothing could be further from the truth. In the first place, true acidosis is not common. It is not even a disease, although it may be a symptom of certain serious maladies; and it almost never occurs in normal persons. In the second place, the nature of the diet has virtually nothing to do with this condition.

Many persons undoubtedly confuse acidosis with a much more common plight known as acid stomach. Gastric hyperacidity, or too much hydrochloric acid in the stomach, is both real and widespread. It may be due to indiscretions in eating or to organic troubles; but whatever its cause, it has no connection with acidosis.

What, then, is acidosis? The word is the medical name for the relatively rare condition in which the blood and body fluids become more acid than is normal. This may be due to an increase of acid but is more frequently caused by a decrease in the reserve supply of alkali in the blood. Under ordinary conditions the blood is always slightly on the alkaline side, and its maintenance in this condition is known as the acid-base balance of the body.

Now, this acid-base balance can be upset, but generally only in severe illness, such as kidney diseases, diabetes, the diabetic coma and certain acute infections like pneumonia and sepsis, or blood poisoning. Acidosis may follow starvation and may result from severe diarrhea, vomiting and other wasting sicknesses. These are, however, abnormal states of the body, which are quite different from the comparatively mild effects of various kinds of food in the diet.

The human machine is, furthermore, a remarkably steady mechanism, which can adjust itself with comparative ease to many changes. Thus the blood itself contains chemical substances known as buffers that react with acid to establish a proper equilibrium. This buffer action is the first line of defense in the body against possible acidosis.

The second line of defense against this condition is provided by the lungs, which are constantly disposing of carbon dioxide, a gas that is the product of carbonic acid. By getting rid of this waste, the lungs are aiding the blood to maintain its acid-base balance.

The third of these body defense mechanisms is the kidney, which unlike the blood can show a relatively wide range of acidity or alkalinity without undue harm. If there is too much acid or too much alkali in the system, it is usually eliminated through the kidney; but if this organ is diseased or fails to function properly, acidosis or alkalosis in some degree may occur. In the normal body the kidney performs these functions without difficulty; but in cases of nephritis, Bright's disease, or other kidney troubles it may not be able to do so.

The acidity or alkalinity of the urine excreted by the kidney can be influenced by different foods, but this does not mean that these foods will have any appreciable effect on the acid-base balance of the blood.

All foods can be classified from the chemical point of view as acid-forming, base-forming or neutral. Thus, food containing a preponderance of alkaline substances, such as calcium, magnesium, potassium and sodium, will be base-forming; while those having more of the acid group of elements, such as chlorine, phosphorus, and sulfur, will be acid-forming. Foods that do not contain any minerals, as sugar, starch, pure fats and pure oils, are neutral.

Using analytic methods of this nature, chemists have shown that foods of decided potential acidity include meats of all kinds, fish, shellfish and eggs, while cereals and breadstuffs will display mild acidity. Bread made with milk, as is now the usual custom in the baking trade, will be approximately neutral in reaction, since the alkalinity of the milk counteracts the mild acidity due to the wheat.

THE base-forming foods include most of the fruits and vegetables, with milk and cream in the mildly alkaline class. Citrus fruits, such as oranges, lemons, grapefruit and limes, contain acids, but these are burned in the body, so that their end-products actually are alkaline.

In the ordinary mixed diet consumed by the average person who has avoided the wiles of the food fakir the acid and base-forming portions of the diet will usually be fairly well balanced. Even if the balance is disturbed, no serious harm is likely to follow, unless the diet is extremely one sided for a long period of time.

This fact has been demonstrated by some interesting experiments conducted recently by scientists who fed human subjects on excessively acid and excessively alkaline foods. They found that a whole quart of milk, a whole quart of orange juice or a pound of bananas, all alkali-forming foods, would not produce even a temporary shift in the acid-base balance of the blood.

Similar results were obtained when excessively acid-forming foods were given to these human guinea-pigs. A pound of steak did not cause any changes in three out of four subjects and brought about only a slight temporary increase in acidity in the fourth. The investigators decided therefore that it would require 4½ pounds of lean beef or 2 pounds of oysters to cause even slight acidity and 18 pounds of oranges to produce even slight alkalinity in a normal person.

It is obvious therefore that the foods customarily eaten by the average, healthy individual will have a negligible effect on the acid-base balance of his body. No one who is in reasonably good health, as shown by an annual examination by his family physician, need worry about acidosis, for it cannot and will not occur in the usual course of life.

A person may adopt a regimen known as the ketogenic diet, which consists of foods high in fats and low in carbohydrates or sugars, and suffer to some extent from acidosis; but diets of this nature are uncommon and are prescribed by physicians only for the treatment of certain serious diseases. It is unlikely that a healthy person would voluntarily select a daily diet comprised almost exclusively of fats, even admitting that some persons will always insist on indulging in weird habits of eating.

DESPITE the evidence that proves so conclusively that the nature of the average diet does not play any part in the production of acidosis, many food faddists continue to exploit the alleged dangers of acid foods, claiming also that certain classes of foods, such as proteins and starches, or fruits and starches, are incompatible. These notions have long since been discredited as physiologic nonsense.

The falsity of these assertions has been proved over and over not only by the experience of millions of eaters who do not follow these deluded systems but by physicians who have made careful examinations of mixtures of proteins and starches and their effects in the stomachs of numerous individuals.

Instead of being incompatible, proteins and starches together have been shown to be beneficial, since the protein is satisfactorily digested and the carbohydrate digestion is prolonged and improved when accompanied by the protein. Most foods are, in fact, more readily digested when they form part of a mixed diet, regardless of what kind of a mixture it is. Thus bread and milk are more easily digested when combined than is either separately, although both are highly digestible by themselves.

The average eater may therefore forget about acidosis. He may not be able to ignore a chronic acid stomach or even an occasional one. In the former case, he should consult his physician; in the latter instance, he should seek a more bland diet, using milk, cream, toast, strained vegetables and fruits, and other smooth viands and victuals.

YOU can forget acidosis, but there are one or two other dietary principles that it is well to bear in mind. Build the daily diet around the protective foods: milk and dairy products, fruits, eggs and green and yellow vegetables, and you will secure an adequate intake of the vitamins and minerals that are so essential to good health, virility and vigor. When you have eaten what you should, and enjoyed doing it, the remainder of the daily fare may be left to the whims of the appetite, provided, however, that you consume no more than you actually need for the daily requirements of the body.

Swimming Holes—

URBAN and RURAL

Ewing Galloway

LET IT BE BIG OR LET IT BE SMALL—BUT A BODY OF WATER HOLDS A FASCINATION THAT FEW CAN RESIST. THE ONE REQUIREMENT IS THAT IT BE SAFE.

Philip D. Gendreau

BAD HABITS IN GOOD BABIES PART I

The heaven is bright
The earth is bright
I have a baby who cries all night
Let those who pass read what I write
And they'll sleep all night
Till broad daylight.
—Chinese Lullaby

"MY FRIENDS and relatives, even our family doctor, all tell me that Frankie is a perfectly healthy baby and that I expect too much of him. He is only 10 months old, you know; yet his antics drive me to distraction. I do not expect my boy to be a puppet, in fact I do everything possible to help him develop a personality of his own. However, from all appearances his behavior is growing progressively worse, and I confess that in addition to making a physical wreck out of me the child has been a source of worry to us because of possible later developments. I hate problem children." Here Mrs. Smith pauses to wipe her tears, and under suggestion that the problem at this early age is far from serious she enumerates the difficulties.

1. Crying. Frankie cries constantly. Day or night the child cries for hours at a time. The cry is vigorous and uninterrupted except for the first few moments after he is picked up. A crying spell can last from two to four hours.

2. Thumb sucking. The baby never goes to sleep without his thumb in his mouth. Any attempt to restrain him from it brings about a violent crying spell.

3. Head rolling. Often with his thumb in his mouth the baby rolls his head from side to side until his ears become red and itchy.

As would be expected these complaints were depicted with a good deal of pathos. Like all mothers, Mrs. Smith would sacrifice everything possible in an effort to rear a wholesome, amiable and self reliant boy. Is the child characteristically "nervous"? If so Mrs. Smith is eager to know what she can do to correct it.

Careful examination of Frankie revealed nothing to account for his disquieting activities. He was a well developed, healthy child and a bit obstreperous; his resistance, however, yielded almost immediately when the mother was asked to step out of the examining room.

To the conscientious physician few scenes are more pathetic than that of the distracted young mother who so often lives in constant fear and trembling over the vagaries of infant behavior. Oddly enough the higher the parental intelligence the greater is the incidence of these complaints. There is a compensatory fact, however, in that these early problems lend themselves to simple corrective measures as a rule, and one does not frequently see serious social trouble when these children grow into maturity. On the other hand, among those who seldom concern themselves with the simple habit disorders during infancy, serious disorders of conduct in early adulthood are alarming.

Mrs. Smith, therefore, and the many thousands of other American mothers of good intelligence are wholly justified in their search for advice and counsel on the problems which their infants present, although the gravity of their plight is more apparent than real. A baby of normal physical and mental endowment should by his every movement and every act bring joy and happiness to his parents. It is only through a lack of understanding of the nature of infancy and childhood that the infant's modes of expression are misinterpreted and parental pleasures are displaced by worry and fear over the child's ultimate development. As one would expect, such a state of mind invariably reflects itself on the baby with the result that many children are made "nervous" by parental overanxiety. It takes but a short time before a vicious circle is thus established: The greater the anxiety of the mother, the more pronounced the irritability

By HERMAN M. JAHR

of the baby. The more the baby fusses, the more the mother worries. It is in this early period of babyhood that the seeds for later inadequacies of the individual are planted. Fortunately, however, it is also during this early period that the uprooting of this evil tendency through proper understanding may be accomplished. In this article an effort will be made to trace systematically the origin and development of the various habit patterns. It is only through a thorough appreciation of motivation of behavior that "bad" habits in early childhood can be dealt with adequately.

CRYING

Of all undesirable habits during infancy excessive crying ranks highest in the number of complaints. It is also first in its manifestation of troublesome behavior. There is a reason for this. The cry ushers in physiologic independence of the child. Deep inspiration thus occasioned allows the new-born infant to expand his lungs. Crying also serves as vocalization whereby the baby makes his wants known. His cry calls attention to his physical needs, such as hunger, thirst or discomfort from any source.

During the early days of life his wants are limited to inward needs as well as to his external welfare: food, water, a comfortable bed, dry clothing and other features that contribute to his ease. If he is unsatisfied with his status, crying brings a change for the better. As he grows, life becomes more complex, and his desires begin to branch out. Gradually he becomes conscious of things about him. He is no longer satisfied with mere physical comforts. He begins to demand attention. But he cannot say just what is on his mind—he has neither the words nor even the image of his desires; he simply cries on the chance that some one may understand his social needs in the same way that those who come to his bedside comprehend his physical requirements, be his vague demands reasonable or unjustifiable.

The mother who can recognize a legitimate cry seldom has to contend with the problem. The normal infant quickly senses the limitations of crying as a means of ruling those about him. In contrast to this type of mother behold the parent who rushes to the crib alarmed and wondering what can be the cause of these bitter tears. She suspects hunger in spite of the steady gain in weight. She suspects colic even though there are no gastro-intestinal upsets. She suspects every illness that it is possible for a child to have, in spite of the fact that a sick baby seldom cries loudly and practically never cries long. The baby is picked up. He has won a victory and stops crying. He is put back in his crib, and the crying starts over again and keeps up until the whole household including himself is exhausted. He falls asleep but is too tired to rest for any length of time. Crying is soon resumed, only more vigorously after the respite.

Why, asks Mrs. Smith, does Frankie cry all night and comparatively little during the day? The answer is simple. During the day the baby undoubtedly receives all the attention he wants and probably a good deal more than he needs. He feels that those who treasure him are close to him, are conscious of him in their waking hours. He knows that he receives ample attention even though he is asleep. A respectable baby does not cry when he has all that he wants. At night when the parents are asleep he feels less sure of his status. He utilizes the experiences he acquired early in infancy, for crying brings results. That the results are not worth the effort the baby is too young to comprehend.

Psychologists have demonstrated, and Frankie illustrated it with classic precision during the examination, that in the transition from vocal habits to the language, sounds are associated with activities of arms, hands, legs and feet. During the crying spell a baby will indeed throw his arms in all directions and kick his feet in every possible position. Is it strange then that as the child reaches the age when crying is considered "baby-like" or "sissy-like" the crying habit simply changes to bullying or pugnacity or destructiveness? The original habit pattern for commanding power and atten-

tion is merely modified to comply with the exigencies of age. The biologic pattern remains basically unchanged.

With Frankie Smith, however, the picture was most gratifying. His mother was able to understand the underlying principles of her small son's "racket" (that is what she called it) and dealt with it accordingly. Mrs. Smith became convinced that a continuous loud cry in a healthy baby was a demand for oversolicitude. Quietly and tactfully yet with determination she adopted the attitude that the little fellow would simply have to learn to respect the comforts of the other members of the household. It took the child but a few nights of judicious indifference to his maneuvers to appreciate his position. Incidentally, when the boy was 2 years of age his mother jokingly complained of an entirely different "racket." It consisted of a twinkle in the eye with an ingratiating smile which evoked more attention than night crying ever did. "But we all love it even though you may call it showing off." Frankie is now 7 years old. He smiles almost constantly, and he is popular with his teachers and classmates alike.

THUMB SUCKING

Practically every baby is born a potential thumb sucker. Indeed one seldom sees a young infant who at one time or another does not put his thumb in his mouth. It should be noted that until the age of 6 weeks or 2 months the infant is not aware of thumb possession. This organ is not recognized as a part of his own body. Gradually after much gazing and scrutinizing the fingers on the hand he ventures by tactile sense to find out something of the nature of these objects. Anatomically early in infancy the four fingers of the hand move as a unit; only the thumb is the isolated digit of the hand. It is naturally easier to put the thumb in the small mouth than it is to insert the whole fist. Some babies, however, do even that.

Psychologically as well as physiologically the mouth is a highly important part of the body. The importance lies in the fact that the mouth affords pleasurable phenomena from the moment life begins, and they endure as long as man remains conscious of living. Thus through the mouth the infant takes food to appease his hunger and water to quench his thirst. As he grows he is gratified to hear his own cooing or crying or babbling sounds. What is of particular significance is the presence on the lips of a mucous membrane which possesses highly specialized and sensitive nerve endings, stimulation of which produces pleasurable sensations.

In the adult this erogenous zone is associated with sexual feeling. This interpretation is responsible for much worry and alarm among partly educated parents in that they often attribute the innocent pleasure of thumb sucking to early manifestation of sex perversion. This type of parent invariably experiences great difficulty in controlling the habit. The gravity with which these mothers view thumb sucking usually robs them of their self confidence, and their overanxiety places in the hands of their children an effective method for attaining power and attention beyond their fondest expectations.

Not infrequently vigorous restraints on thumb sucking bring about lip sucking. The baby simply uses his upper or lower lip on which to exert suction pressure with his cheeks. Interestingly, we often encounter mothers who though shocked at the thumb sucking habit do not hesitate to place in the mouth of the baby a pacifier or a "teething ring," which serves the same purpose.

Often thumb sucking is combined with other mannerisms. A case that came to my attention recently is that of a 2 year old boy who was in the habit of placing his right thumb in his mouth, and with his left hand crossed to the right temple he would seize a tuft of hair and curl it around his left index finger. This accomplished he could suck his thumb while his finger would hold on to the curl for half an hour.

In the opinion of most pediatricians the deforming results accruing from thumb sucking have been unduly exaggerated except in extreme cases. It is true that when the habit is persistent and of long duration an outward

displacement of the teeth with pushing out of the upper lip may take place. However, in the majority of the infants if some judicious attention is paid to this activity with a sensible view as to its real meaning the habit can be corrected. Simple diversion of the child's interest through suitable toys or play will usually accomplish more in the way of prevention than any restraining method in existence.

During the child's early infancy the mother is at times justified in tying a cardboard cuff around his elbows if the thumb sucking is too annoying. Generally, however, few babies would be afflicted with this habit if mothers, fathers and aunts developed a saner and less quasi-scientific attitude toward the normal expressions of the normal infant. The child who is physically healthy, mentally alert and emotionally happy is seldom a trouble maker. Bad habits are often forced on a young child through misguided oversolicitude. Undesirable acts become habits only when parents or other attendants place a premium on these acts. Thus most older babies and young children resort to thumb sucking only when they are tired or unhappy from some cause. Repeated exhortations and warnings and punishments for this benign diversion serve only to stress the power that the youngster possesses over those about him. He would be abnormal if at this early, unreasoning age he did not take advantage of such power.

HEAD ROLLING

While crying and thumb sucking are natural phenomena and represent necessary steps in the progress of physical and mental development, head rolling and other unsightly head movements usually start from some irritative cause. Rickets, a common disorder of infancy, is probably the most frequent underlying factor in the production of the head rolling habit. It is well to remember generally that many bad habits often develop as an outgrowth of some major or minor disease condition and that the movements thus started on an organic basis may persist even after the causative factors have ceased to operate. At times, and this is particularly true of rickets in mild form, the disease is not even suspected because the symptoms may be so indefinite that the mother often attributes them to teething, hunger or some other vague condition.

One of the early manifestations of rickets is sweating about the forehead. It is readily conceivable that the baby, dissatisfied with the perspiration, will turn his head from side to side in an effort to wipe the moisture on the pillow or the sheet. This procedure brings relief, and the child learns quickly to repeat the process when his forehead becomes moist. Also his restlessness brings attention from those who are not particularly pleased with this activity. He has found a new way of commanding attention, and any method by which he can secure increased solicitude will be retained as long as it remains effective as such.

In Frankie's case this is exactly what happened. He had had head sweating at the age of 6 months, which proved to be associated with early rickets and was treated successfully. The child's head rolling habit was undoubtedly acquired on the basis of this organic disturbance, but after the condition was cured he was loath to part with an effective weapon which served him to command all the attention he desired. Incidentally it was utilized to full advantage on occasion when crying became tiring and his vocal cords needed rest.

Head rolling may also start as a result of faulty focusing of the eye muscles. In such a case the baby attempts to fix the eye on some object of interest to him, and he tries to follow it by shifting his head from side to side. Placing a bright toy in front of the baby, as mothers often do to occupy his interest, not infrequently results in this bad habit. If there is a tendency to weak eyes this foolish procedure may damage the ocular muscles by straining them.

It must be evident that as far as the baby is concerned badness as applied to his habits expresses merely a quantitative change of his natural endowments. It is natural for an infant to cry; his very life depends on this phenomenon. Excessive crying, however, constitutes a bad habit. Early in this game of living the only way in which he can convince himself that the thumb is actually a part of him is to guide it and feel it with his own lips. Repeated placing of this digit in his mouth makes him a thumb sucker. Movement is one of the cardinal functions of life itself. Yet turning the head rhythmically from side to side makes him a head roller. How many parents think of these inconveniencing expressions in terms of their biologic significance before they classify them as bad?

The desire for power and attention is a normal attribute of a healthy mind. When this subject is mentioned as the underlying basis for maintaining an undesirable habit, mothers, and fathers too, are often skeptical. They argue that the child in question receives all the attention any one can possibly give him. He is loved and treasured above anything else in the world. This is probably true without exaggeration. "Is there no limit to power and attention that the baby may desire?" they ask in despair. Of course there is a limit. The child's wants are simple indeed as compared to the complex and at times unattainable desires for power in the adult. The child's satisfaction is reached when he feels that those near and dear to him understand him as a human being. His demands for power are fulfilled only when he senses that wholesome understanding.

(To be continued)

THE TUBERCULOSIS OF TODAY

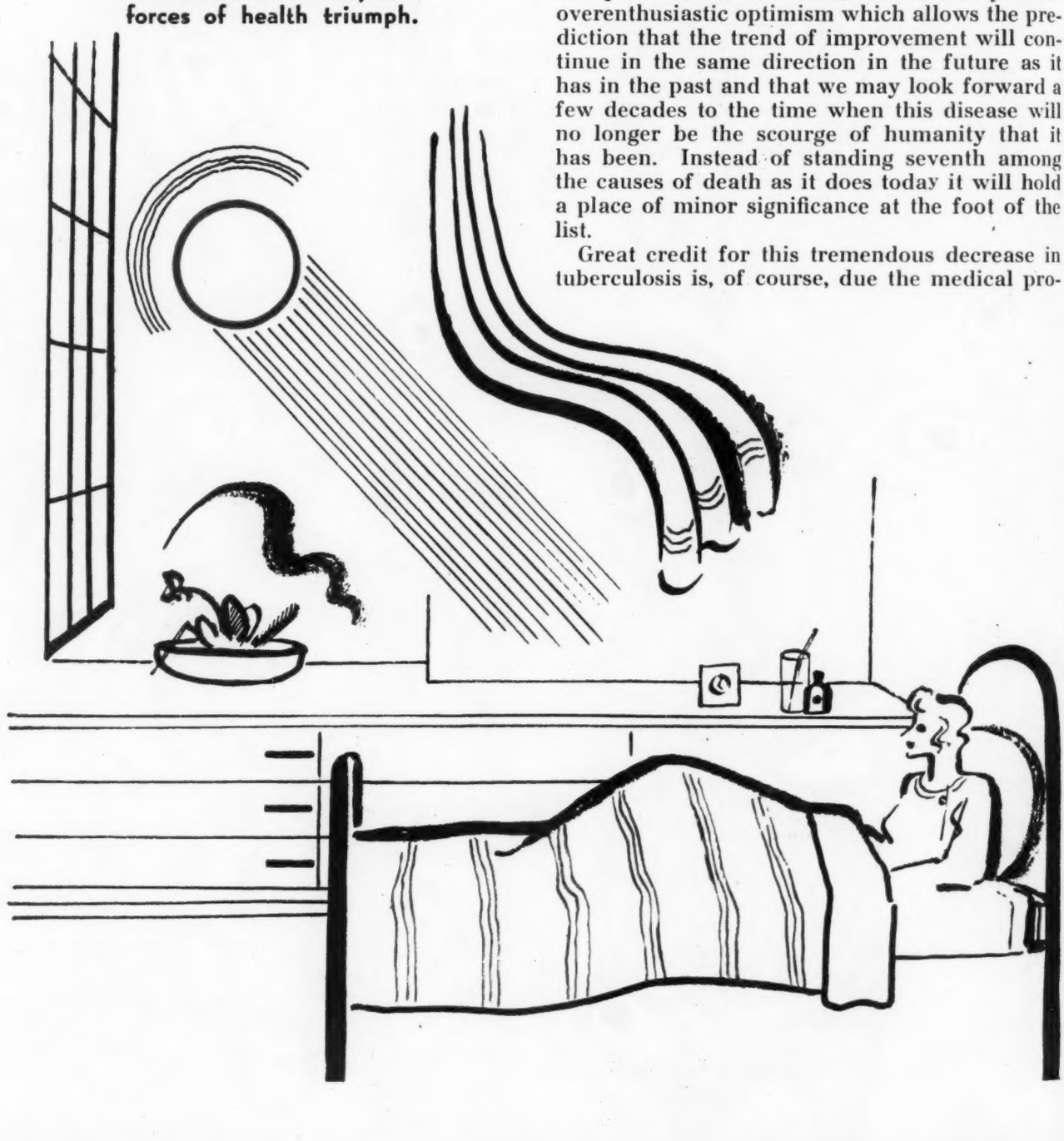
By E. W. BILLARD

Yesterday it was a dictator; today sees a revolution, and tomorrow—may the forces of health triumph.

IT IS A matter of common knowledge that for centuries, tuberculosis has been one of the major health problems of medicine, and it is therefore with much satisfaction that physicians are able to say that at last they are beginning to see the light of day, that they are able to predict with a fair degree of certainty that this disorder will gradually bow to the forces which are attempting to overcome it, just as yellow fever, smallpox and typhoid have been overcome.

In the year 1900, 280 persons out of every 100,000 in New York City died of tuberculosis; that meant 1 death out of every 360 persons. In 1914 there were 200 deaths per 100,000, or 1 out of 500; while at present, twenty-three years later, the death rate is approximately fifty-five per 100,000, or 1 in 1,800. It surely is no overenthusiastic optimism which allows the prediction that the trend of improvement will continue in the same direction in the future as it has in the past and that we may look forward a few decades to the time when this disease will no longer be the scourge of humanity that it has been. Instead of standing seventh among the causes of death as it does today it will hold a place of minor significance at the foot of the list.

Great credit for this tremendous decrease in tuberculosis is, of course, due the medical pro-



fession; but factors other than conscious human efforts must also have been of great influence, for nature has probably played an important rôle in this improvement, and there has probably been developed through the centuries a strong natural tendency to limitation of the disease among the race and of resistance to the disease on the part of individuals.

If we study the records of the previous century we find that the decrease in mortality was just as striking then as it has been in the past thirty years. From a death rate of 500 per 100,000 in 1855, we find a drop to 280 in 1895, although at that time the doctors knew very little about methods of control or prevention of this disorder. The germ that causes it had not been isolated until 1882, 55 years ago; and until the present century, when the National Tuberculosis Association came into existence, no organized efforts at combating tuberculosis had ever been made. And so to a certain extent we must be grateful to a kind Providence for the present favorable status.

The fact still remains that in New York City last year almost 5,000 persons died of tuberculosis, and when it is considered that this is one of the preventable diseases, any time or effort expended in the direction of attempting to limit or control it is well spent. The price of victory in this, as in other endeavors, is eternal vigilance, vigilance in detecting the disease in its earliest possible stage and then in directing the treatment along lines that will enable the patient to return to a position of usefulness in the community with as little delay as is consistent with safety.

To diagnose tuberculosis early in its existence requires the cooperation of a well informed public, which realizes that every one is susceptible to tuberculosis, that any one may contract it, that robust appearance or obesity is no guaranty against it, that the symptoms are varied, uncertain and not at all specific, that they may be few or numerous, that they may resemble those of any other disease and above all, that at the first sign of ill health it is of the utmost importance to see a competent doctor and have a medical examination.

THE following symptoms are characteristic of tuberculosis. The patient tires easily and without apparent cause; he feels weary and lacks endurance; he may lose appetite and weight, have frequent pains in the chest, perspire too freely, and have a cough that persists for a few weeks.

If you have these symptoms, see your doctor, and let him determine their cause. Don't attempt to explain a cough by calling it a cigaret cough and thus lull yourself into a false sense of security; there is always the possibility that it is being caused by something far more serious, and the neglect of an examination because of such false assurance may frequently deprive a person of suitable treatment early in the disease, at the time when it would do the most good.

Another popular fallacy in attempting to explain a chronic cough is that the individual has had it for a long time, is used to it by now, and it's only bronchitis anyhow. This "diagnosis" is particularly prevalent among elderly people. How frequently one hears it said that grandfather has had a bronchial cough so long that he'd be lonesome without it. Proper investigation might disclose that the old gentleman has been suffering from a chronic benign form of tuberculosis which has enabled him to live comparatively free from symptoms while spraying his surroundings and relatives quite generously with tuberculosis germs which may have wrought serious damage over a period of years. A medical examination would have discovered this condition and enabled the patient to observe precautions which would have protected those around him.

I HAVE deliberately neglected to mention the important symptom of blood spitting, for it is usually so startling that the patient does not require any urging to see a doctor. However, bringing up blood does not necessarily spell tuberculosis; nor indeed do any, or even all, of the symptoms mentioned. They can be compared to a knock in an automobile in that they point to the fact that there is something wrong going on, that the machine isn't functioning properly, and it is important to investigate and find out what is causing the disturbance. It may be any one of a number of different ailments, including tuberculosis. On the other hand, it may prove to be nothing more serious than a run-down condition due to overwork or worry, in which case the remedy is an obvious and simple one.

IT IS unfortunate that the popular conception of tuberculosis is such a terrifying one and that it is considered by some to be a hopeless disease. This view is not at all consistent with the facts, but it can be readily explained. Most persons know the disease by the name "consumption," which is really a misnomer for it describes but one phase of a disease which may manifest itself in any one of several different forms. It is true that when the condition has progressed to an appreciable degree, it may be accompanied by marked loss of weight and general wasting; but it is also true that with early diagnosis and proper supervision most patients need never reach this stage. There is a natural tendency on the part of the body to resist, overcome and heal many types of tuberculosis, but it requires the aid and cooperation of a patient who is aware of his condition and eager to follow good advice. Every doctor who has had

much experience in this work knows at least a few of his colleagues who have been afflicted but who have recovered to such an extent that they are able to lead active lives in the pursuit of their profession, and some of them even indulge in exercise as strenuous as tennis and swimming.

Many individuals have been invalided for years and finally died of tuberculosis, and it is from these cases that the popular conception is derived. But because tuberculosis seems to carry with it a certain unfortunate and erroneous social stigma, patients try to hide it as much as possible, and one is therefore less likely to know of the many persons who have a more benign form of the disease, which does not incapacitate them and which enables them to engage in gainful but perhaps restricted occupations and continue as useful, important members of society. By observing certain simple principles and precautions which they have learned thoroughly they are in no way a menace to those about them.

It is even possible for tuberculosis to develop in certain persons, run its course and heal without the patient ever having known that he was host to the process. Occasionally when a physician is doing a postmortem examination on a person who was killed in an accident or who died from some cause unrelated to disease of the lungs, he discovers scars of an old, healed tuberculosis; or sometimes, when making an x-ray examination of the chest because of injury to the ribs, the physician may be surprised to find signs of a similar healed lesion. When questioning these patients or their relatives, one may find that at no time to their knowledge had they ever been incapacitated or suffered any lung trouble.

Of course these are exceptional cases, and it would be a mistake for any one to take too much for granted because of them, but it should be a source of great encouragement to the person who learns that he has an early lesion, to know that with proper care and attention to detail he may look forward to the time when he too will have conquered this invader and may again assume his former place in the community.

In examining a patient in whom tuberculosis is suspected, probably the most important single procedure is the taking of an x-ray picture of the lungs, for this frequently brings to light certain information which the stethoscope cannot detect. Examination of the sputum also must not be neglected, in order to determine whether the person has and is spreading tuberculosis germs.

I shall not go into the details of treatment except to emphasize one phase of it with which most persons are familiar, and that is the importance of fresh air. This does not mean that it is imperative for the patient to go out West or to go to the mountains in the East. If he can have a well ventilated room in a location where there is plenty of fresh air and have adequate medical supervision, it is not always necessary that he go away from home in search of health. One of the most tragic aspects of the history of tuberculosis takes us back to the chapter of thirty or forty years ago, when every patient felt that if he could only reach some distant health resort, the magic of the atmosphere would in some mysterious manner effect a cure. Thousands of poor unfortunates, many of them in the last throes of illness, found their way to such a land of promise, where they continued to suffer not only from their disease but from the added privations associated with the lack of funds, lack of care and the forlornness that comes with the realization of being separated by thousands of miles from their families and loved ones.

Doctors know that in attempting to educate the public to symptoms of disease they run the risk of creating a great deal of needless fear and apprehension. They know that as a result of tuberculosis campaigns and cancer campaigns the information and the warnings broadcast may be taken amiss and cause some healthy persons to become worrisome and fretful, to exaggerate slight symptoms that they may have and possibly to imagine new ones. Don't worry about these things yourself; let your doctor do your worrying for you. If you have any symptoms that seem abnormal to you, if you are in doubt as to the condition of your health, don't continue in the dark, and don't go around concerned about something which probably doesn't exist. Go to your doctor, and receive a thorough examination. You will probably be assured that you have no serious organic disease and will receive advice on how to overcome the ailment which happens to be troubling you. Isn't it much more sensible to follow such a procedure than to continue to harbor imaginary fears which spring from lack of knowledge? On the other hand, if any abnormal condition is present, it is decidedly to the benefit of the patient that it be recognized and suitable steps be taken for its eradication without delay.

A persistent cough must not be neglected; it demands immediate and thorough investigation. To delay while indulging in self medication with "patent" cough remedies may deprive a patient of the opportunity of treatment during the period when the disease would respond most effectively to suitable measures of control. Find out the cause of that cough. If it should happen to be tuberculosis, help your doctor to help you attain that ultimate goal which has been reached by so many before you: the complete arrest of the process and your return to your previous state of activity.

FLORENCE NIGHTINGALE

By ANNETTE FISKE

THE IDEALIZED figure of the Lady with the the Lamp becomes flesh and blood as one gazes on the badge which she received from Queen Victoria for her work in the Crimea and on the diamond bracelet given her by the Sultan of Turkey. These are now in the Museum of the United Service Institution in London, for the gratitude of the British soldier meant much to her, and she wished these gifts to be "where the soldiers could see them." Florence Nightingale was very human.

Had there been a Girl Scouts organization at that time, Florence would doubtless have belonged, for she loved flowers, birds and animals, and she loved service. She had many pets, including a pig, a donkey and a pony. She always had a cat, and her affection for dogs is hinted in an anecdote she told. "An invalid, in giving an account of his nursing by a nurse and a dog, definitely preferred the dog. 'Above all,' he said, 'it did not talk.'" Fond, as most young girls are, of nursing and bandaging her dolls, she also liked to give first aid to injured animals and enjoyed visiting the poor with her mother. Such visits were customary on the part of those in comfortable circumstances, and her own family was very well off.

Fancy work, music, grammar, the modern languages, these were the subjects ordinarily studied by young ladies of that time, but the education of Florence and her sister did not stop at these. Their father taught them constitutional history, Latin, Greek and mathematics, and by the time she was 16 he was reading Homer with them. By some, Latin is looked on today as an impractical subject, but Miss Nightingale found it a great help in her conversation with abbots and monks whom she met in her travels, for it was the only tongue she had in common with them. Even more important was the help it gave her in developing her mental powers. Her mind was always alert. When she traveled through France and Italy at the age of 17, it was not only of the scenery and of pictures that she wrote in her diary but of the way the people lived and what they did for the sick and other unfortunates. Politics interested her greatly, and she was exceedingly fond of music, especially the opera.

THE LADY WITH THE LAMP

Capable and energetic, Florence had an unusual ability for planning work. When the family were arranging entertainments her assistance was always sought. She was stage manager for all theatricals. In times of trouble it was again to Florence that all turned for help. Such a nature could not help but seek some useful occupation in life, and by the time she was 23 she was thinking seriously of taking up nursing as a profession. Nursing was not then, however, what it is today. Her family, more especially her mother, opposed the idea of her becoming a nurse.

The objections, quite generally shared, were based on the nursing conditions then existing, which were not fitting for a lady. Most of those who engaged in it lacked refinement, and many drank to excess. Years were to pass before the family prejudice weakened enough for her to obtain her wish.

These intervening years were not lost, however. They gave her a wide view of life and people, and they laid a broad foundation for

her future work. A visit to Rome in the winter of 1847 brought her valuable friends, including Sidney Herbert, under whom her war work was carried on. Egypt and a trip up the Nile two years later widened her knowledge of people and her sympathies for them. Egypt seemed to her a sad country. "Nothing," she said, "ever laughs or plays. Everything is grown up and grown old." Nor was it strange that she should feel this way. For she saw girls sold in the open slave market for from ten to twenty dollars apiece. It seemed to her that every one was beating everybody else. "Every man," she wrote in her notebook, "is a conscript for the army, and mothers put out their children's right eye to save them from conscription, till Mehemet Ali, who was too clever for them, had a one-eyed regiment, who carried the musket on the left shoulder."

On all her trips, Miss Nightingale sought out the nursing sisterhoods and looked into their work. She did more than that. She took a short course at Kaiserswerth on the Rhine, where the deaconesses were trained in the first real training school for nurses. She could not yet take up nursing in earnest, but she went to Paris early in 1853 to study the hospitals and the work of the Sisters there. It was shortly after her return from Paris that she actually took charge of an "Establishment for Gentlewomen During Illness." No opportunity was allowed her, however, to widen the work, and she was considering accepting another position when terrible stories began to come from the battlefront about the poor care given the sick and wounded in the Crimea. Sir Sidney Herbert, secretary of war, who had met Miss Nightingale in Rome, wrote to ask her help in caring for the wounded. Two days after the arrival of his request she had made her plans; in ten days she was on her way.

It is hard for us to picture today the conditions Florence Nightingale found in the Crimea on her arrival. The General Hospital at Scutari accommodated 1,000; the Barrack Hospital, half an hour's walk away, where she had her headquarters throughout her stay, had accommodations for 2,400. They were frightfully overcrowded, however, most of the time. The beds extended for three or four miles, and it took three or four hours to serve dinner. There was no ventilation and no proper sanitation. Florence Nightingale became an expert at killing rats, with which the place was infested. The story is told of her that one night she knocked a huge rat from the rafters above the head of a Sister she was nursing and killed it without disturbing her patient.

Probably most of us imagine that Miss Nightingale spent all her time in the wards, dressing wounds, but this was only a small part of her work. She opened two extra diet kitchens for special diets. She took a practical interest in the many wives and children of soldiers who were with the army, opening a lying-in hospital and setting the women to work washing, fixing up dressings, and the like. She established a café as a means of preventing drunkenness and opened reading rooms for the men. She not only encouraged them to write home and to send their pay to their families, but she herself wrote or got others to do so when they were unable to write themselves.

The men adored her. As one wrote home, "What a comfort it was to see her pass even. She would speak to one and nod and smile to as many more; but she could not do it to all,

you know. We lay there by hundreds; but we could kiss her shadow as it fell, and lay our heads on the pillow again, content." "If the Queen came for to die," said another, who had lost a leg, "they ought to make *her* queen, and I think they would." One of her London friends

said that her position in the hospital enabled him to understand the saints of the Middle Ages. If the soldiers had been told that the roof had opened and she had gone up bodily to heaven, they would not have been in the least surprised. They were quite sure she could be in several places at once. In fact, they were so impressed with her power that they were often heard to say that if she were leading them, they would be in Sebastopol in a week.

Yet Miss Nightingale had many difficulties to combat in her work—petty jealousy, neglect, poor planning. Supplies were missent, tied up with red tape or wholly lacking. When the commissioner of the London *Times* fund inquired about needs he was assured by the British ambassador, Lord Stratford, that nothing was needed. So the offer was then made directly to Florence Nightingale, who accepted it with gratitude as a supplement to her personal funds.

"I am," she wrote Sir Sidney Herbert early in 1855, "a kind of General Dealer in socks,

shirts, knives and forks, wooden spoons, tin baths, tables and forms, cabbage and carrots, operating tables, towels and soap, small tooth combs, precipitate for destroying lice, scissors, bedpans, and stump pillows. I will send you a picture of my Caravanserai [her large kitchen], into which beasts come in and out. Indeed the vermin might, if they had but 'unity of purpose,' carry off the four miles of beds on their backs, and march with them into the War Office, Horse Guards, S.W."

Miss Nightingale believed in doing a job thoroughly; so she stayed on several months after the war ended in the spring of 1856 to see all the hospitals closed. She declined the man-of-war offered her for her return to England and dodged the companies of Coldstreams, Grenadiers and Fusiliers who wanted to meet her with their three bands when she landed. Her arrival was wholly unannounced, for she disliked show. What her sister called her spoils of war arrived before she did in the form of a one-legged sailor boy who had spent ten

months in hospitals; a little Russian prisoner of whom she had taken charge, and a big puppy found in a hole by some soldiers and given by them to her. Her greatest treasure was a bunch of grass which she had "picked out of the ground watered by our men's blood at Inkerman."

By her work with the army, Miss Nightingale opened a new career to women and proved their right to a place in military hospitals. All her efforts were exerted to make nursing a trained profession and to improve the medical administration in the army. Though her health had been broken by the long and continuous service —she often wrote until 2 or 3 o'clock in the morning—she persisted in her efforts to aid the British soldier. Her notes on the hospital administration of the British army led to many reforms. The Nightingale Fund, a fund formed for the carrying out of her other dream, the establishment of a proper training school for nurses, had been started as early as November 1855, and in June 1860 the Nightingale School was opened at St. Thomas' Hospital in London, the forerunner of all modern training schools. The founders of the first training school in this country, that at Bellevue Hospital in New York, founded in 1873, sought her advice.

Though she was an invalid for most of her life after her return to England, Miss Nightingale lived to be 90, dying August 13, 1910. Up to within a few years of her death she was fond of reciting poems by Milton and Shelley and pieces in French and Italian. She was the first woman to receive the Order of Merit, which was bestowed on her in November 1907 by King Edward VII "in recognition of invaluable services to the country and humanity." The following March she was given the freedom of the city of London, only the second woman to receive this honor. Burial in Westminster Abbey might have formed the culmination of the honors heaped on her, but it was declined by her family as being contrary to her wishes. A devoted worker for high ideals, she put self glorification last.

MAD DOG! MAD DOG! MAD DOG! MAD DOG! MAD DOG! MAD DOG! MAD

By FRED O. TONNEY

"WHAT WAS all the shootin' about up the road today, Dad?" queried Sonny with a note of awe in his voice as old Dr. Smithies settled back into his chair after supper and struck a light to his pipe.

For a moment the doctor was silent, puffing intently at an intractable spark while the logs crackled in the fireplace, throwing weird, flickering shadows over the darkened room.

"Big doings, Son," he granted at last as, having mastered the pipe, he leaned back in the big arm chair.

Sonny sidled shyly toward him, a bit uncertain. "I—I was recitin' 'rithmetic up at school, Dad, when—pop!—pop!—pop! I heard it through the window—way *off*, like, *six times*, Dad!"

"Want to get set, Son? Then I'll tell you about it."

Sonny breathed a satisfied sigh and quickly crept into his Dad's lap. Then he relaxed in utter ease. It was just what he wanted.

"Comfy, Son?"

"Comfy, Dad."

Thus they sat before the glowing embers, their faces dimly outlined in the half light.

At last: "What was the shootin', Dad?"

"Mad dog!"

"Oo!" Sonny shivered. "Did—did it *bite* somebody?"

"Yes, Son, two or three—maybe more—we don't know yet."

"Who?"

"Well, your friend Hebe Schwartz up the road, for one."

"Yeah?" The boy couldn't believe it. "Why—why—I played marbles with Hebe only yesterday."

"And little Lottie Wilson across the road, too, and—and maybe a lot of others."

"Where were you, Dad?"

"I was just coming along there in the ole flivver when I saw another one of those stray dogs running loose, and I was thinking there are a lot too many of them in these parts lately, far too many. And I was wondering what the pound master was doing up at Cross Roads Corner, not picking them up—that is, not *much*—when . . ." His voice trailed off.

"What, Dad?"

"Well, I noticed the dog was wobbling as he ran; one hind leg was dragging. The two youngsters were playing there, just ahead."

"Oo, Dad!"

"Then I saw old Si Perkins, the constable, coming out of his gate across the road, and

lucky enough, he had both guns on. *That* was something, for by that time I was getting pretty close, and I could see the dog was slavering at the mouth, too! But there were the kids, playing in the road and not even looking.

"I stopped, jumped out of the car, and yelled 'mad dog' at Si. I grabbed one of his guns, and we both ran after the dog, trying to get in shooting distance." He puffed at his pipe. "Well, Son, we were about half a second too late. That stray dog made a bee line for those kids, just as I knew he would. We were racing hard but still too far away to shoot. He wobbled and staggered and slavered. But he went for 'em—fast! I yelled . . . they looked up then and started to run, but . . ." He smoked on in silence.

"He bit them, Dad?"

"Yes. He got Hebe in the leg and little Lottie right in the cheek . . . a terrible gash! Then he ran on, still wobbling and dragging one leg—but faster than Si and I could make it. About that time, Gus Stengel's two shepherd dogs, Spot and Shep, ran out and tackled him! One on each side! Boy! Was *that* a fight!"

"Oo, Dad!"

"But anyway, it gave Si a chance to catch up."

"Si? But where were you, Dad?"

"I stopped to fix up the kids. They were more important, of course, and Si went on after the dog. Anyway, thanks to Shep and Spot, he got within shooting distance—but not before the other dogs were badly torn. So he shot the stray dog. Four times it took."

"But, Dad! I heard *six* shots!"

"Yes, I know," sadly. "One was for Spot and the other for Shep, at close range."

Sonny was shocked. "B-but why, Dad? Why Spot and Shep? *They* didn't do anything. Just look how brave they were! Maybe they saved a lot of us kids from being bitten! Oh—Dad!"

"Yes, yes, Son, I know—it's terrible to think of, in a way; but you see, Spot and Shep were almost torn to ribbons. They would surely have gone mad themselves in a few weeks. Maybe they would have bitten a lot of children. Might even be you, Son. Who knows?"

"You—you mean they would have died anyway—those doggies that were so brave?"

"Yes, Son. They surely would have—a terrible death, too! So it was better this way—quick like—not so much suffering, you see."

"Oh, I'm—I'm *awful* sorry, Dad—about the dogs, I mean. I wish it hadn't happened. B-but what about Hebe and little Lottie?"

"Well, I bundled them into the bus and took them over to Uniontown to get the first dose of the Pasteur treatment."

"So they won't go mad themselves, Dad?"

"Yes, that's it. Then I went back and picked up the carcass of the dog and took it over to Doc Williams at the state laboratory."

"What'd he do with it, Dad?"

"Well, he had his assistant take out the brain, and then he made some thin films of the mashed tissue of a certain part of the brain on a lot of glass slides."

"For the microscope, you mean, Dad? They showed 'em to us when we visited there from school."

"Yes, Son. And then he fussed around a while with the slides, putting solutions and stains and alcohol on 'em, till finally he dried 'em off with a paper blotter and was ready to look at 'em."

"With the microscope, Dad?"

"Yes, so he started looking, while I sat there for quite a while." He puffed at his pipe. "It was kind of queer being there. I hadn't seen the new state laboratory since it was finished. It surely was fine: the glistening black tables, with a lot of sinks every little way; wall cabinets

chock full of shiny glassware and brass instruments, and all the queer apparatus and fixings everywhere around!"

"Didn't you know what they were for, Dad?"

"I should say not! Those things all came since *my* time in medical school! Of course, I had used microscopes, but these were a lot fancier than the ones I had."

"Anyway, there I sat while Doc Williams looked—and looked—and looked. I could see he was getting kind of excited! Finally he said, 'Just take a look at this one, Dr. Smithies!"

"And did you, Dad?"

"Sure I did! And I'd never seen anything like that specimen before under the microscope."

"What was it like, Dad?"

"Well, there was a background of a faint bluish network, and then here and there were some six-sided bodies of much darker blue, with big, sharp pointed angles, drawn out to a thin point.

"What were they, Dad?"

"They were ganglion cells, brain cells. They're from a certain part that is called Ammon's horn because it's curled around in a circle like a ram's horn."

"Um-hm!"

"And then, right inside these ganglion cells I saw some roundish, bright red bodies of different shapes and sizes. Some were round, some oval and again, some were irregular, with rounded buds sticking out. And inside these red bodies were a lot of deep blue dots. In some they were arranged in curved rows like, well, like a new moon, I'd say—a crescent."

"What were they, Dad?"

"They're called Negri bodies, and they're only found in the brain cells when the animal or person has rabies."

"You mean, only when they're mad, Dad?"

"Yes. The name of the disease is rabies. In human beings it's sometimes called hydrophobia, meaning 'fear of water,' because people who have it have a terrible dread of water."

"But why do they, Dad?" Sonny wanted to know.

"Well, you see, rabies first affects the muscles of swallowing. It sort of partly paralyzes them, and then when a person who has it tries to swallow liquids he gets a terrible, agonizing cramp in the throat. So he soon becomes very much afraid of water for fear of getting the cramp again. Later on, even the sight of water will throw him into one of those terrible, painful spasms. So before long he becomes terrified when he sees water.

"And then pretty soon he begins to feel that he wants to bite something, that maybe just clamping down with his jaws would relieve that terrible, painful cramp in his throat."

"But does it, Dad?"

"Oh, no, it doesn't. Nothing does, when he's *that* far gone! Nothing!" The doctor sighed.

"Then do they always die, Dad?"

"Yes, I guess they do, Son." After a moment he continued, reflectively. "I've only seen two or three people die of it but—well—I'll never forget it! There's no worse end that I know of, not anything else at all!" A pause ensued. "And I've seen a lot of ways in my time, Son." He puffed away at his pipe and then he continued, "But there they were, those cherry red Negri bodies with the deep blue dots in them against the blue background of the brain cells.

"'Well, what say?' I asked.

"Doc Williams finally spoke up. 'It's rabies, Dr. Smithies, not a doubt in the world about it. The dog was mad.'

"So I knew I'd been right in taking little Hebe and Lottie right over to Uniontown for the Pasteur treatment."

"Is this Pasteur treatment the only way to keep them from going mad, Dad?"

"Yes, it's the only way known, Son!"

"B-but who invented this Pasteur treatment you're talking about, Dad?"

"A French scientist named Louis Pasteur!"

"Was he one of those scientists who work in laboratories?"

"Yes, Son, he was. But at first he didn't have much of a laboratory to work in. He just fussed around under an old staircase and did his work on a rough wooden table."

"But he really found out how to cure mad dogs—and mad people?"

"Oh no, Son! Not cure—only *prevent!* Nobody can *cure* rabies once it sets in. It's too late then!"

The boy was much surprised.

"But, then will this treatment really save little Lottie and Hebe from going mad, do you think?"

"It's as sure as anything like that can be, Son. The percentage of failures is very small, especially when the treatment is begun so early."

Sonny was much relieved. "That's fine, Dad! You sure did us kids a mighty good turn today—me and my playmates both!" He thought for a moment. "But, Dad, how *is* it that rabies comes along this way, in dogs and people? What causes it, anyway?"

"An unknown germ, Son, we don't know what. But it has something to do with those Negri bodies in the brain cells. Anyway the germ, or virus as it's sometimes called, is present in the saliva of the victim for quite a while, even before the animal or person gets sick."

"For how long?"

"Oh, about 5 or 6 days or so."

"And how's it spread . . . this disease, I mean?"

"Almost entirely by biting, Son."

Sonny couldn't quite understand. "You mean that people bite each other?"

"Oh, no. That's very rare! Of course sometimes they do, in a de- *(Continued on page 740)*

Keystone View Co.

Animals of Destiny

THE PROGRESS of man, from cave shelter to penthouse, has been influenced constantly by the lower animals. The present generation is indeed fortunate that such animals were brought under domestication. But for that, mankind would be living under conditions which it passed some thousands of years ago; because of that, man's ascent from a savage state was hastened. Animals assured bountiful larder while the excess food supply not required for home use was a source of barter; they provided plentiful labor, emancipating man from the heaviest burdens of toil and allowing him time and energy for trade, commerce and travel.

THAT was only the beginning, however. Animals proceeded to change the frontiers of nations, to crown and uncrown kings, to dictate religious practices and to cause many a diplomatic headache; they left a mark on architecture, on landscapes, on styles of clothes, on customs and conditions; they sent to death untold millions of people and saved from death other millions.

The dog was the first animal to become domesticated, probably some 60,000 years ago by savage cavemen, and for the same reason that the society matron of today owns a dog; namely, the desire of the human being for a pet. The early dogs were half-wild wolves or jackalls, which through domestication and crossbreeding developed rapidly into animals of economic usefulness. They were natural hunters, assisting in procurement of the food supply; they were trained to protect other animals, tending the flocks and herds in agricultural communities; they were hitched to harness, pulling wagon or sled, even as they do today; they were put into treadmills turning the wheels of industry, and they were sources of entertainment, baiting the bull and the bear or fighting with each other in the pit.

Dogs enjoy a more intimate contact with man than does any other animal; they share not only his dwelling but sometimes even his bed and

By THOMAS GORDON HULL

his board. Thus man is exposed to several diseases from which dogs suffer.

Rabies is the most serious, for in the dog this disease finds a reservoir for its perpetuation. In former times there was a tremendous amount of hysteria in connection with rabies. In persons bitten by rabid dogs the disease developed in an alarmingly high percentage of cases, and death was certain and horrible. Heroic measures were instituted, such as shooting, strangling, suffocating or poisoning persons thus infected or suspected of infection. In France unfortunate victims were sometimes smothered between mattresses. In Germany in 1810 a bill was presented whereby "it is forbidden, under pain of death, to strangle, suffocate, bleed to death or in any other way murder individuals suffering from rabies." In recent years antirabic vaccination has so reduced the incidence of the disease in both dogs and man that there are scarcely three score human deaths from this cause in the United States annually, and these are mostly among persons who have neglected or delayed to have the vaccine administered.

The dog tapeworm is the most dangerous of the intestinal parasites; it carries on the adult stage in the intestine of a dog, while its larval stage is spent in the tissues of some other animal, a human being if he is so unfortunate. Another tapeworm is transferred from the dog to the intestines of children by means of infected lice and fleas which may be accidentally swallowed or perhaps crushed and afterward transferred by fingers which all too often go into the mouth. Occasionally a dog has contracted tuberculosis from drinking infected cow's milk, and anthrax and glanders from eating meat of animals dead of such diseases. Sometimes a dog has acted as a mechanical carrier of disease as in the case of rat-bite fever, where infection of a person was caused by the bite of a dog which had recently fed on an infected rat.

Cases of human infection from dogs are steadily decreasing, for medical investigation includes the ailments of dogs as well as of man. Indeed, in the field of the medical sciences the dog has found a place in the promotion of human welfare that cannot be filled by any other animal.

The dog has contributed largely to our present knowledge of physiology and the cause and cure of numerous ailments; the normal action of the human heart and how it may become disordered; the determination of blood pressure; the normal action of the intestines; the treatment of digestive disorders; the prevention of rickets; the process of breathing and the means of giving artificial respiration; the treatment of glandular disturbances, such as pituitary disease; the treatment of diabetes by insulin; the treatment of pernicious anemia by liver; the treatment of hookworm disease by various drugs; the prevention of pain by anesthesia, and other items too numerous to list in these pages. Every human life is affected by contributions of the dog.

The horse was domesticated at a relatively recent date, and it immediately took a leading rôle in the destinies of mankind. No other animal has so fired the imagination. There have been demon horses, angel horses, ghost horses, witch horses, fairy horses, sun horses, moon horses, wind horses, sea horses, night horses and headless horses. The centaur of the early Greeks, that weird combination of a horse with a man's body at its head, resulted from impressions formed by the first encounters of Greek warriors with enemies mounted on horses. The American Indians also believed that horse and rider were one being when they first met mounted Spanish soldiers. Horses have been worshiped in various lands. The Trojan horse was accepted by the people of Troy because they thought the Greeks had built it as a peace offering to the goddess Athena. Small children today play with their rocking horses and hobby horses, or pretend they themselves are horses.

The horse has left a more complete record over the earth for a longer period of time than any other of the domestic animals. A million years ago it was a doglike creature with five toes; when man took his place in the scheme of things, a hundred thousand years ago, it had reached its final state of development, the "equus" form that we know today. Its range by then was confined to the plains of Asia, north of the Caspian sea and eastward to Mongolia. Primitive man used the horse only as a source of food supply. In the late stone age period, about 25,000 years ago, horses must have been quite plentiful, for one camp site of less than two acres in France has shown the bones of more than 80,000 horses. Through the centuries that followed, drawings of horses were made on the walls of caves, but always indicating the animals in a wild state. The strength, the speed and the sagacity of the beast made it difficult to capture and domesticate.

The period known as civilization was ushered in as a "horseless" age. Babylonia in all its wisdom owned no horses; Egypt had no horses with which to build the pyramids and none for several hundred years to come; the Arabs did not use horses until after the Christian era. Horses were first introduced as servants of man by the wild tribes living in the hills of Persia. About 4,000 years ago these tribes descended to the plains of Mesopotamia, raiding settlements and driving out the Sumerians and Babylonians. The progress of the invaders was greatly facilitated by the "asses of the east," so called by the dismayed Babylonians.

The horse has held a significant place in military operations. At first it was used to draw war chariots, for it was a small animal. By 750 B. C., breeds had been developed large enough to carry riders. As time went on, horses made it possible for armies to carry with them food supplies, ammunition and even heavy cannon which otherwise would have been left behind. The horse has had an even more important part to play in the development of civilization from a nonmilitary standpoint. The wagons of commerce, the carriages of society, the messengers of mercy and love all depended on the horse, man's faithful servant and friend.

In spite of the intimate contact which man has had with the horse, the instances when disease has been conveyed from animal to master have indeed been rare. Glanders is the only disease to which man is subject that finds a reservoir in the horse. Human infections are comparatively few, veterinarians and laboratory workers being the two groups most likely to contract the disease. Glanders in horses is becoming less common because of the dwindling number of animals, the abolishment of the public watering trough and the isolation of horses on farms. Anthrax may infect horses, and there have been several "outbreaks" of this disease in persons using shaving brushes made from improperly treated horse hair. Rabies is infectious for horses, but rarely is the disease passed on to man.

The significance of the horse in the destiny of man has not dwindled but rather received a new orientation. During the last half century the horse has been used in the production of serums and antitoxins, for which it is an ideal animal because of its size and its relative immunity to most human ailments. Diphtheria antitoxin was begun about forty-five years ago; how many human lives have already been saved by this one product alone it is difficult to estimate. Other human diseases against which the horse is a beneficent intermediary include tetanus, meningitis, scarlet fever and pneumonia. As time goes on, the horse is destined to save untold millions of human lives.

The cow has been called the "foster-mother of the world"; it is the most indispensable of all the domestic creatures, furnishing not only labor but milk and meat as well. It has also been called a "pest to be found wherever civilized man makes his abode" for it is a prolific source of contagious diseases.

Cattle were domesticated in early times, first in Asia, whence they migrated into Africa and thence to Europe. There were several wild types which eventually served to produce the various breeds known today. Cattle have never taken a spectacular place in the history of the world. From time to time they have held temporary prominence as sacred animals: The Bible reports golden images of calves which the Israelites worshiped; a stone statue of a sacred cow has been found in Egypt, and the stone bull of Siva is still held in reverence in India. Cattle have furnished amusement and sport in the arenas of Spain and the rodeos of the United States, always, however, with man as the opposing contestant and the animal as the eventual

Ewing Galloway

A CENTURY LONG CAMPAIGN OF VACCINATION HAS GREATLY REDUCED THE INCIDENCE AND VIRULENCE OF SMALLPOX. EVENTUALLY IT MAY PASS INTO THE LIMBO OF FORGOTTEN DISEASES.

loser. For the most part, cattle have held a lowly place, content to pull a farm cart or furnish milk or wait for the butcher.

The diseases which the cow transmits to man are several. The most serious is bovine tuberculosis, to which children are especially susceptible. Two separate campaigns have practically eliminated the danger for human beings in the United States, one on the part of the cattlemen for the protection of the animals, whereby all cattle are tested and those found infected are destroyed, and the other on the part of health officials, whereby all milk sold in cities is pasteurized to prevent the possibility of transmitting the tubercle bacillus. Other diseases which are of importance are undulant fever, which occurs more frequently in the population than is suspected; anthrax, of which about a hundred human cases are reported annually in the United States; foot and mouth disease, rather rarely contracted by man, and rabies, the virus being passed on through the milk. The beef tapeworm is commonly found in man. Diphtheria, scarlet fever and streptococcus sore throat are human diseases which the cow may contract and pass back again in the milk, causing extensive epidemics.

Credit must be given to the cow for a reliable means of combating smallpox. Before Jenner focused attention on the fact that cowpox prevented smallpox, there was scarcely an adult person whose face was not pockmarked. A century long campaign of vaccination has greatly reduced the incidence and virulence of smallpox. Eventually it may pass into the limbo of forgotten diseases. Long live the cow!

Swine were used for food by the ancients since early times. In Turkestan, bones were found in camp litter dating about 6000 B. C.; in China, hogs were supposed to have been domesticated in 3468 B. C.

SWINE are responsible for several human afflictions of considerable significance. Trichinosis was the cause, in part at least, for the Hebrew prohibition against pork, promulgated by Moses. The intestinal worm causing this disease might be eradicated were it not for the rat, which becomes infected to reinfect the hog. About 1880 several European countries prohibited the importation of American pork because of the prevalence of trichinosis, and this resulted in a long and acrid diplomatic controversy. Other human diseases sometimes contracted from hogs are the pork tapeworm, rare in the United States; tuberculosis, both the human and the bovine types; undulant fever, the porcine type being especially virulent; anthrax, occasionally; swine erysipelas, in a few instances, and food poisoning by eating flesh of animals previously infected.

The domestic rat—domestic in the sense that it makes its abode with man—is the most useless of all animals. There is nothing to say in its favor; there are numerous reasons why it should be exterminated. As a marauder it has taken heavy toll of farmer, merchant and householder; as a murderer it has destroyed millions of innocent persons. Among the animals it is public enemy number one.

THERE are several varieties of rats, three of which are of interest from the domestic standpoint. The common brown rat, so prevalent in our homes, is a ferocious beast and has largely driven out other kinds. It is found living under floors, in sewers or in the ground. It is a great traveler, going considerable distances in a single night and several miles in a few days. Great armies of the animals have been reported traveling together. One fantastic story comes down from the second century, when rats formed living bridges over rivers, each rat holding in its teeth the tail of the animal in front. In 1727, troops of rats were seen crossing the Volga into Astrakan. In 1903, hordes of rats were seen migrating across the state of Illinois, in one instance spreading as far as the eye could see in the bright moonlight. The next year another observer encountered a similar migration of rats in the valley of the Kansas River. The black rat is a sea traveler, confining itself to ships and to the upper stories of buildings. It has been practically driven out of the United States by the fiercer brown rat. The roof rat, or Egyptian rat, resembles the black rat, but it has never found its way in any numbers to the United States.

The origin of the rat was in Asia, from where it has followed man to the ends of the earth. It was present in Europe in the Pliocene period, as indicated by fossil remains; the "lake dwellers" during the glacial period in Europe knew it; the Philistines made golden images of it; the Romans pictured it on coins; Greek, Roman and Etruscan works of art show it at various occupations, such as gnawing the ropes of ships or feeding on mussel beds; from Palestine and Italy ancient bronze and terra cotta works indicate its presence. During the eighteenth century the brown rat swarmed over the earth, reaching almost every country and establishing itself permanently.

The cost per annum of maintaining rats, as estimated by the United States Department of Agriculture, varies from 50 cents each on farms to $5 each in hotels. In cities it is said there are as many rats as people; on the farms there are countless millions more. Rats go into the fields to destroy the crops before they are harvested; they breed enormously in storehouses, warehouses and ships and feed on any merchandise available; they damage the building in which they live by making holes in walls and foundations; they destroy poultry and eggs and attack livestock on *(Continued on page 765)*

ODD ORIENTAL "CURES"

A stone near Tokyo is supposed to cure measles if the victim is pushed through the hole in the center of it.

At a medicinal shrine Japanese women seek to cure an ailment whose name in Japanese is the same as the word for dipper; hence the dipper offerings. Since the disease is an obstruction, each has a hole punched in it. At right, a Chinese druggist advertises otter's liver for pulmonary troubles. The jars hold snakes for these ills and for general debility.

E. H. Cassidy, Japan

"Doctor, What Dentifrice

"DOCTOR, what dentifrice do you recommend?" is a frequent question in dental offices. Dermatologists are confronted with similar questions because of sensitiveness of some individuals to constituents of dentifrices. Millions are spent by advertisers in keeping their products before the public—more, indeed, than for making them. The user is bewildered with claims and counterclaims. The dentist and dermatologist were in the dark because, in most cases, the formulas were secret. Some of the advertising possessed an air of plausibility to the uninitiated. Research existed only in the advertising office.

Not infrequently a would-be manufacturer consults the American Dental Association's Council on Dental Therapeutics for advice on marketing a toothpaste in accord with the best ethics; but when he is asked concerning the formula, the reply usually is, "Oh, that's what I came to see about. I've got a swell name and a good advertising tieup."

Only in recent years, since the formation of the Council on Dental Therapeutics, is any real inquiry being made into dentifrices. The reason is not hard to find. The council limits a dentifrice as an aid to the toothbrush in cleaning the surfaces of the teeth. If the formula is safe and is advertised in accordance with these limitations, it may be held acceptable and may thus bear the distinction of displaying the council's seal.

Many have inquired in detail about this acceptance. The following comments will serve to show the care with which the council attempts to guard the public's interest in this field.

Dentifrices, to be placed on the list of accepted dentifrices of the Council on Dental Therapeutics, must meet certain publicized conditions:

1. A formula, giving the kind and amount of each ingredient, must be made available and found acceptable to the council. The council will not accept potentially poisonous or frank medicinal ingredients, and the weight of doubt will be thrown in favor of the user. The council holds as a fundamental premise that the user is entitled to know what he is asked to put into his mouth.

2. The abrasiveness, sometimes referred to as the polishing action, must be furnished by the manufacturer. Even though the abrasiveness may be low, the council cannot accept a dentifrice containing a "polishing agent" low in abrasiveness which may react chemically on the enamel of the teeth. Nor will the council accept dentifrices which contain markedly abrasive agents. Abrasiveness may, for this discussion, be defined as the ability to wear away the teeth by mechanical means. The council will not accept dentifrices containing silicious materials, such as pumice, silica and the like, until evidence is available that the daily use of such material is not harmful to the softest part of the tooth; namely, the cementum.

3. New dentifrices put on the market after 1932 must be labeled So-and-So's Tooth Powder, So-and-So's Dentifrice or Toothpaste, or names with similar connotations. Exceptions are made in the case of dentifrices whose names were on the market prior to the formation of the council, or where a brand name has been in use prior to this time, but under no conditions will the council permit, as part of the principal label, the title Dr. or D.D.S. Those descriptive names which have been on the market before the formation of the council are accepted only with the understanding that they are a brand name and not a descriptive name.

4. Collateral advertising, that is, advertising for newspapers, magazines and radio, must be acceptable and must adhere to the definition of the council regarding the limited function of a dentifrice; namely, an aid to the toothbrush in cleaning the accessible *surfaces* of the teeth.

The composition of dentifrices may, and does, change. One dentifrice on the market has been changed at least five times within the last decade. It is unnecessary for each user of a dentifrice to remember the exact composition of any dentifrice at any time. However, he has a right to insist on a statement of composition in terms of kind and quantity of substances present.

THE council will not, at the present time, accept toothpastes containing potassium chlorate; drugs related to carbolic acid, like betanaphthol, which is stated to be a constituent of one heavily advertised product on the market; sodium perborate, which may give rise to burns of the mouth; orris root, to which many people are allergically sensitive, or inordinately large amounts of sugar. In the case of new substances not previously used in dentifrices the council will demand as a condition of acceptance, tests to show their safety.

The hardness of the different parts of the tooth vary. Cementum, the softest part of the tooth, has a relative hardness of 90, dentin of 150, and enamel about 1,000, according to one

Shall I Use?"

By SAMUEL M. GORDON
and
ELEANORE B. DUFOUR

method of measuring hardness. Well formed teeth, where the enamel surface is continuous with the gum line, may be expected to be resistant to most of the dentifrices on the market today, as far as abrasiveness is concerned. However, in the case of exposed roots or where there is not complete contact between gum margin and teeth some of the more abrasive dentifrices on the market may be expected to wear away the cementum, which is the outside covering of the root. This is particularly true in older persons. It is only within the last few years and particularly at the insistence of the council, that this information is being assembled. This accounts for the council's willingness to accept, at the present time, any reasonable method for measuring abrasiveness. At some future date it may be possible to establish a single standard. Such a position is analogous to the cod liver oil situation with respect to vitamin D. It is only recently that one standard method has been adopted, although many were in use previously. Adoption of a single standard implies that there is good agreement between results from the test and in actual use.

Some substances which are relatively soft, as far as abrasiveness is concerned, may react chemically with the enamel and thus bring about its destruction. Hence it is desirable to view the dentifrice in the light of both its chemical composition and its physical properties. Such a substance is sodium monometaphosphate, or tartaric acid, which is found in several dentifrices.

The council has noted that there is little research involved in the production of denti-

frices, despite claims to the contrary. Tooth powders may be satisfactorily compounded in the home. Toothpastes, which may be preferred by some because of their convenience, require special handling and special equipment for manufacture. Many of the claims which have been furnished as based on special research are, as a rule, without foundation. The patent records contain ridiculous combinations proposed for dentifrices. If one desires to experiment with making one's own tooth powder, the following statement from the pamphlet, "The Home Medicine Cabinet," put out by the Consumers' Project of the U. S. Department of Labor, which is available for the asking, may be of interest:

> A saving may be effected and the consumer may know what is in his dentifrice by making it at home. The following formula given in the National Formulary is suggested by the Council on Dental Therapeutics. Half of this formula makes over 16 ounces of tooth powder, enough to last the average family for several months.
>
> | | |
> |---|---|
> | Hard soap, in fine powder, grams.. | 50 |
> | Precipitated calcium carbonate, grams ..... | 935 |
> | Soluble saccharin, grams..... | 2 |
> | Oil of peppermint, cubic centimeters ..... | 4 |
> | Oil of cinnamon, grams..... | 2 |
> | Methylsalicylate, grams..... | 8 |
>
> To make about 1,000 grams
>
> The powder should be stirred while adding the flavoring oils, a little at a time, and then the whole put in a mason jar and shaken vigorously. Some drug stores may not be able to supply the powdered soap or precipitated calcium carbonate, but if consumer demand for these articles is large enough, druggists will soon begin to stock them.
>
> If the druggist is asked to do the mixing, the price is likely to be so increased that no saving is effected.
>
> An added advantage in mixing the ingredients at home is that the amount of flavoring material can be regulated to suit the user's own taste.
>
> A convenient container for home-made tooth powder is an empty salt box with a metal spout. It can be filled through a small opening cut in the bottom of the container and the opening later closed by pasting over it a piece of paper.

Collateral advertising includes advertising made in newspapers, magazines, over the radio or through any other mediums of communication. It should be appreciated that the purchase of package goods is made not on the basis of label statements but on the basis of claims made in advance of purchase of the article. Furthermore the Food and Drugs Act enacted in 1906 does not give the Food and Drug Administration jurisdiction over these avenues of collateral advertising. The composition of dentifrices on the market has been less objectionable than the claims made for them. The claims made for some dentifrices pass beyond credulity. Scientific information was frankly distorted in favor of the advertiser's wares or magnified out of true proportion to actual significance.

Some of the prominent claims have been that dentifrices containing milk of magnesia would cure "acid mouth." Critical dentists do not recognize acid mouth. It is an advertiser's disease. As a matter of fact, the reaction of the mouth, expressed in a common chemical expression, p_H, is close to the point of neutrality, and the p_H of the individual may normally vary over a wide range on either side of neutrality. Furthermore no amount of brushing with milk of magnesia or other alkaline substance is able to alter materially the reaction of the individual's saliva. A Johns Hopkins investigator fed two-thirds ounce baking soda without any change in acidity of the saliva. No milk of magnesia dentifrice can be expected to help much in reducing decay, as far as the available evidence goes. Milk of magnesia, strictly speaking, is not contained in any of the so-called milk of magnesia dentifrices. One manufacturer went so far as to claim that the use of his milk of magnesia dentifrice might have saved the user a bad case of rheumatism.

Other common claims are that the use of a dentifrice containing betanaphthol, which is chemically related to carbolic acid, would prevent or overcome "pink toothbrush" which is caused by the soft foods of modern civilization. "Pink toothbrush" is another disease advertisers seek to inflict on us. Dentists do not recognize such a disease. On the other hand, bleeding gums, with which "pink toothbrush" is often combined, not only may be a symptom of local injury to the gums, which of course demands dental attention, but may be a symptom of serious underlying conditions. Bleeding of the gums may be a symptom of many diseases. It would be not only foolish but tragic to depend for the cure of bleeding gums, which may cause a reddening of the toothbrush, on a toothpaste containing betanaphthol. Because of its irritating properties the daily use of betanaphthol cannot be viewed without concern. Indeed, it should surprise no one if the continued use of a toothpaste containing betanaphthol in appreciable amounts did bring on bleeding gums, which would tinge the toothbrush pink. There is no valid reason in the light of present-day medical and dental evidence to warrant the use of betanaphthol or ip-ecac, as the name of one toothpaste may suggest.

"Film" should be abhorred according to one group of advertisers. Other dentifrices play on the film theme. In the early days the film was supposed to be removed by a pepsin-digesting action, but this claim has been disproved. In later years, it was re- *(Continued on page 762)*

TO WEAR CONTACT LENSES THE PATIENT MUST BE DRILLED BY THE EYE PHYSICIAN IN THE REQUIRED MANIPULATIONS, UNTIL SKILL AND CONFIDENCE RESULT.

CONTACT GLASSES

By JAMES E. LEBENSOHN

"INVISIBLE SPECTACLES," "the glasses of the future," are phrases that have been enthusiastically applied to contact glasses by journalists and manufacturers. The contact glass is in truth a cosmetic triumph; when worn its invisibility is uncanny. Nevertheless most of the contact glasses used have been worn by unfortunates whose peculiar visual defect required their assistance. The principal drawback has been the difficulty involved in securing a comfortable fit, but this problem is being gradually overcome by improvements in design. A definite advance has been made in the past few years, and further progress may be confidently anticipated. As far as the average lens-wearing individual is concerned contact glasses are not yet to be considered as an optional substitute for spectacles, but this possibility may be realized when and if complete comfort is assurable.

To many persons the present cost of contact glasses would probably be prohibitive, as a single such glass now retails for from $35 to $50. Moreover the successful fitting of contact glasses requires a long and arduous examination. Individuals with lesser visual errors must have both eyes fitted. In such a case the examination and glasses would cost a total of $100 or more. However, with the extreme defects that affect the usual candidate for contact glasses, a one-eyed fitting is adequate, and the expense is proportionately less.

The hazard in the use of contact glasses has proved negligible. In not a single case has a contact glass broken while being worn. The danger in this regard is less than with ordinary rimless spectacles. Minor injuries may result, however, from lack of care and skill in inserting and removing the glass. The patient must be drilled by the eye physician in the required manipulations until skill and confidence result.

The principle that inspired the contact glass is optically sound. In looking at an eyeball one sees overlying the pupil and iris a clear transparent disk, the cornea, surrounded by the "white of the eye," medically known as the sclera. The curvatures of these two elements are different and subject to individual varia-

tions. In general the shape of a contact glass is that of a helmet; and when properly fitted the brim rests evenly on the sclera, and the crown clears the cornea. In applying a contact glass the bowl is first filled with a tepid solution of 0.9 per cent table salt (sodium chloride), so that after insertion this fluid will completely occupy the space between the cornea and the glass. Abnormalities of corneal curvature are thus optically eliminated.

Contact glasses are not so new as is popularly assumed. It is now fifty years since the idea was simultaneously proposed in 1887 by three German scientists working independently. In Zurich the oculist Fick tried a contact glass in conical cornea; in Kiel a medical student, August Mueller, sought to find in the contact glass an efficient substitute for strong spectacles, and in Wiesbaden a maker of artificial eyes, F. A. Mueller, successfully designed an appropriate shell to protect an eye, the lids of which had been destroyed by cancer. This Mueller of Wiesbaden became so expert that for years his firm supplied most of the contact glasses in use. These contact glasses were blown, and though optically inexact were fairly comfortable. Since 1922, precision accuracy has been achieved with a ground contact glass, but it is only recently that improvements of design have made the ground contact glass comparable in comfort to the blown type. The public interest in the subject dates from 1929 when at an international congress of eye specialists Germany's Professor Heine advocated anew this lens as a cosmetic substitute for unsightly spectacles. Since then this scientific achievement has received repeated attention in newspapers, magazines and motion pictures.

In the United States, some 3,000 persons are now wearing contact glasses; in Europe there are even more, since Europeans have a much greater aversion to spectacles than Americans and are more willing to undergo hardships to avoid them. Most of those who choose to wear contact glasses do so because of medical and vocational considerations rather than for purely cosmetic reasons. One eye physician in New York has fitted contact glasses in more than 200 cases. Men predominate in the ratio of 5 to 1 among wearers of contact glasses.

THE ordinary glasses not only have their limitations in outdoor and athletic pursuits but are an even greater vocational handicap to the personnel of stage, screen and opera, where glasses are proscribed regardless of visual deficiencies. Among the notables of the theater who are said to wear contact glasses are Libby Holman, Kate Smith and Constance Bennett. Though the public is more indulgent to the minister, lecturer and politician their popularity is still apt to be adversely affected if the lenses worn are beyond the esthetic limits of thickness. The prejudice against thick glasses makes job seeking especially difficult for many. Cupid, too, may be spectacle shy; according to Dorothy Parker's observations, "Men seldom make passes at girls who wear glasses." But with the contact lens the myopic or astigmatic romantic maiden can solve her quandary of how to see well and be seen well simultaneously.

The contact glass is made of thin walled, chemically resistant glass. The weight is but 0.5 gram, or one-fifth that of a new dime. The required lens occupies only the central 8 millimeters, or one-third inch, of the eye. This area, which is the size of the pupil when maximally dilated, is ample since the contact glass moves with the eyeball in all directions. Incorporating the lens power in a contact glass results in a threefold advantage over ordinary spectacles: a gain in perspective, fusion and visual field. In addition, myopic persons are benefited by a reduction in lens thickness and an increased magnification of the retinal image.

IMPROPERLY fitted contact glasses are uncomfortable and hence are eventually discarded, but they do not cause any harm. Failures in the fitting of contact glasses are chiefly due to the frequent asymmetry of the sclera. Investigators in this country and abroad are attempting to solve this problem by designing scleral brims based on accurate molds of the anterior eyeball. Individuals who cannot be inured to a ground contact glass may find the blown form acceptable.

The use of contact glasses will probably be limited for some time because of their costliness, the expensive trial sets required, the tedious examinations necessary and the difficulty of securing cooperation during the trying process of adaptation.

Zeiss Photos

WHO COULD GUESS THAT SHE IS WEARING GLASSES?

HEALTHGRAMS ✣ from Articles in This Issue

¶Encouragement of self help during convalescence and provision of adequate outlets for the child's energy and interests are as important for mental health as is proper exercise for physical health. *See page 724*

¶Health is not a subject to be taught but a way of living. *See page 749*

¶The cow has been called the "foster-mother of the world"; it is the most indispensable of all the domestic creatures. *See page 709*

¶Adoption of a single standard for dentifrices implies that there is good agreement between results from the test and actual use. *See page 714*

¶Evidences of failing heart action must be recognized early and treated so that the reserve power of the heart can be preserved. *See page 684*

¶Stray dogs are a menace to your dog and to your child as well as to others, and they may be carriers of rabies. *See page 726*

¶The human machine is a remarkably steady mechanism, which can adjust itself with comparative ease to many changes. *See page 693*

¶Happiness and a sense of well being are conducive to good posture. *See page 720*

¶It is only through a thorough appreciation of motivation of behavior that "bad" habits in early childhood can be dealt with adequately. *See page 696*

¶Constipation is not a disease but a symptom of many diseases and hence is not to be managed by general suggestions to cover the entire group of people so afflicted. *See page 731*

¶There is a natural tendency on the part of the body to resist, overcome and heal many types of tuberculosis, but it requires the aid and cooperation of a patient who is aware of his condition and eager to follow good advice. *See page 700*

¶Hay fever is now considered to be a form of allergy, best described as abnormal sensitiveness to contact with substances which in themselves are harmless to the nonsensitive person. *See page 678*

¶It is now freely admitted that gangrene is as preventable as coma if proper supervision is maintained over the lower extremities, where the vast majority of such lesions begin. *See page 713*

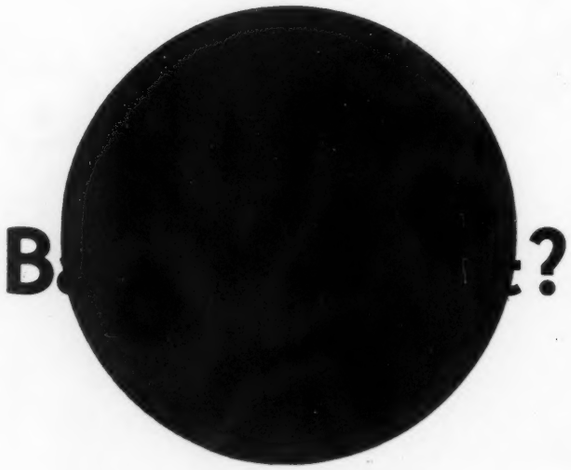
¶A pimple about the nose, though popularly classified among the laughable diseases, may actually be more serious than an infected appendix. *See page 742*

AIR CONDITIONING (Continued from page 683)

Beside the generally used central installations, there are one-room units now available, which may be as easily placed as any ordinary piece of electric equipment. This is vastly more than can be said of the work required on a full-scale job.

To obtain successful results the engineering coexistent with air conditioning any building entails remarkable knowledge. There are many exterior interferences to be considered, including temperature, latitude, prevailing wind direction, comparative length of season and particularly the construction of the building in question. In some instances, particularly in the case of factories, the engineers must calculate to the *n*th degree the effect on heat loss of the building's construction, exposure, contents and the capacity of materials to consume and release moisture, as well as a thousand and one other items, including the number of persons to occupy the room. Insulation of the remote parts of the house or building must be established, with windows and doors tightly sealed with weather strips.

A valuable phase of air conditioning for hospitals is the fact that as all windows and doors are necessarily kept tightly closed the elimination of street noises is possible. This in itself will doubtless have a beneficial effect on persons suffering from mental diseases.



B[illegible]t?

By J. C. ELSOM

NOT LONG ago there appeared at a doctor's office a mother with her 14 year old daughter. The mother was induced to consult a physician because she was beginning to think that Mary's back "was getting crooked," and she wanted to know something about certain exercises which might correct the condition. At first glance little Mary looked all right; as she wore a loose blouse her shoulders seemed to be quite even, and there was no outward indication of a spinal curvature. The physician asked a few preliminary questions about Mary's general health, her habits, appetite, sleep and the like, and how long since the mother had first noticed the trouble with her daughter's back. "Oh, just a few weeks ago I noticed that there was something wrong."

A careful examination of the patient with her clothing removed revealed a scoliosis, or lateral spinal curvature, which had evidently existed for many years and which had produced marked structural changes in the dorsal vertebrae. An x-ray examination showed clearly the serious condition which this unobservant mother had noticed "only a few weeks ago." The decided curve in the upper portion of the spine was apparent; the disklike cartilages between the spinal bones had become wedgeshaped, and the ribs were crowded on the concave side of the curve. There were compensatory curves in the lower part of the back and the neck. The condition would undoubtedly grow worse unless measures were taken for its correction.

The doctor explained that the condition was so far advanced that corrective exercises, while often valuable, would not alone be sufficient to remedy the spinal defect. A properly applied cast was advised which was to be worn for months; the defect was of the bones and not altogether of the muscles. The constant pressure of the specially fitted brace was necessary to straighten the misplaced vertebrae, and since Mary had a number of growing years ahead of her the condition might be well corrected. To this proposition little Mary was violently opposed. She was apparently a positive little creature who was accustomed to having her own way and evidently bossed her own mother. She went to dances, she said, and didn't want the boys to feel the apparent hardness of her waist! And so Mary and her mother left, promising a future return. They never came back. What happened to Mary the doctor never knew; but he did know that untreated she would grow steadily worse, with a permanent deformity. Strange, isn't it, that a careless mother had not observed through these years the abnormal condition and had neglected the suggested treatment when it was wisely offered?

Correct posture has a decided influence on one's health. There must be generous room in the chest and abdomen for the proper function of the important organs. Perhaps Mary's deformity may have been due to lack of calcium and phosphorus, important bone forming materials. Her diet may not have had an adequate proportion of these chemical ingredients; rickets may have been a factor in her "crooked back." Perhaps her posture was habitually careless and gradually assumed a chronic condition. Both of these causes might have been avoided.

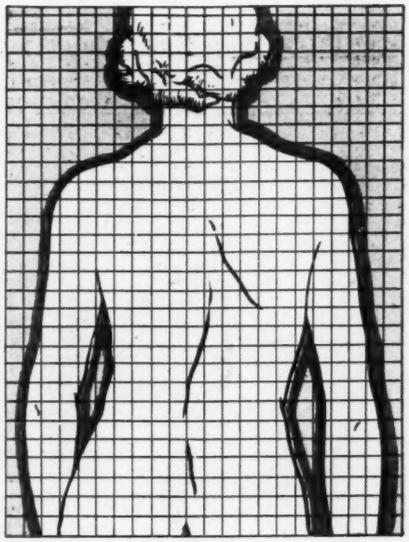
It has been said that man may have developed from a quadruped, and when he arose on his "hind legs" his troubles began. His center of gravity was changed, his points of support were relatively small, and the maintenance of his equilibrium demanded the action of many muscles of spine, chest and abdomen. His arms, instead of acting as supports, hung as weights, pulling him forward. The erect posture was difficult and demanded the constant action of muscles hitherto undeveloped. It has also been said that when he invented a chair his troubles again were increased. When fatigued, primitive man threw himself on the ground for complete relaxation in a prone position. The invention of a chair allowed him to slouch in poor postural position and to bring about spinal deviations of injurious tendency. In modern days the school work of children exaggerates the possibility of spinal defects. Round shoulders (kyphosis), sway-back (lordosis) and lateral curvatures

(scoliosis) are far too common. In general, these defects are the results of three things: malnutrition, habitually poor posture and muscular weakness. Adequate food and exercise are the remedies. A round shouldered, flat chested child may often be cured simply by abundance of nutritious food and opportunity for his natural vigorous play in the open sunshine.

It may be said also that happiness and a sense of well being are productive of good posture. The influence of the mind over the body is enormous. Expansive states of mind tend toward the use of the extensor muscles; the head is thrown back, the chest pushed out and the spine straightened. On the other hand, there are the collapsed positions of fatigue, grief, shame and other depressing emotions. In these conditions the flexor muscles are brought into play. These muscles tend to become overused in general everyday activity. The biceps of the arms and the pectorals of the chest are illustrations of the members of the flexor group. The pectorals pull the chest and shoulders forward. Excessive use of these muscles causes them to grow shorter and to produce the stoop

shouldered condition so common in laborers, especially in coal miners, whose work in confined places does not allow them to stand upright. Hence, corrective exercises should be directed to the extensor muscles, those which retract the shoulders. It has been said that yawning is nature's method of relieving tension by expanding the chest, throwing the head and arms back and in other ways giving temporary relief from cramped positions. Yawning, then, is really a corrective exercise, unconsciously taken.

A further cause of round shoulders in school children may be found in defects of hearing and vision. In the former the child may have a tendency to lean forward in order to hear better; in the latter, when astigmatism is present, the child discovers that his vision is clearer when his head is tilted to one side, and so he habitually assumes a poor postural position.



A CAREFUL EXAMINATION OF THE PATIENT, WITH HER CLOTHING REMOVED, REVEALED LATERAL SPINAL CURVATURE, WHICH HAD EVIDENTLY EXISTED UNNOTICED FOR MANY YEARS AND WHICH HAD PRODUCED MARKED STRUCTURAL CHANGES IN DORSAL VERTEBRAE.

Of course, in the natural movements of everyday life the posture is continually changing. All the muscles were made to be used and exercised; it is only when habitual and excessive use of certain muscles and incorrect bodily positions are practiced that the habit becomes set and abnormal structural changes occur. Prevention is therefore easier than correction. The habit of carrying school books or other weights for long periods under one arm may gradually produce muscular and even bony changes in a growing child.

The position of the spine, shoulders and chest throughout the growing period may ultimately influence contours and proportions. An erect carriage is necessary for full vigor and health, in addition to preventing waste of energy in any activity of life. Correct posture aids in the growth and development of children.

There are a number of tests for posture. One is called the vertical line test. The long axis of the body is a vertical line. A line dropped from the front of the ear to the forward part of the foot should bisect the body laterally.

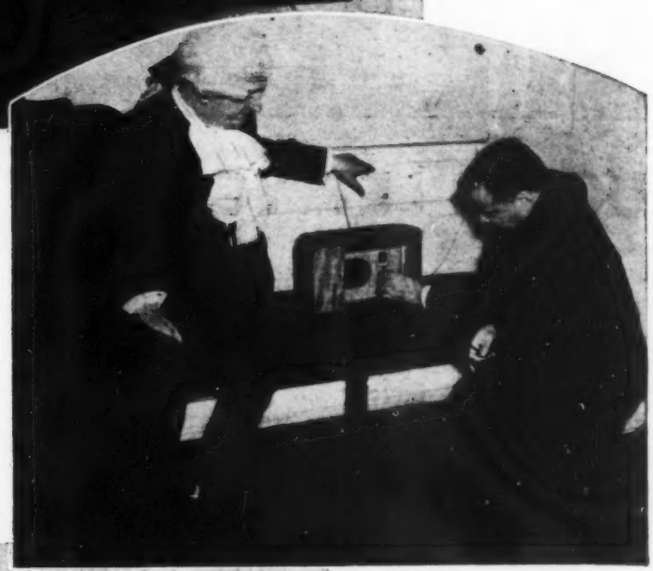
The remedy for poor posture is a somewhat difficult problem and depends first of all on the long continued cooperation of the patient. Unfortunately this is not always easy to secure. In general, it may be said that those corrective exercises are best which teach the child (1) to hold himself in a position in which he tries to "grow tall"; (2) to hold the chest forward and up; (3) to keep the head back, and (4) to draw the abdomen in. In these exercises the shoulders will take care of themselves. The oft repeated admonition to "hold your shoulders back" is poor advice, because one may force the shoulders backward and still have a poor posture, which has sometimes been called the "bantam position." The best corrective exercises are those which bring into play the extensor muscles. Flinging the arms backward and upward while one holds the head back and the chest up is helpful. Hanging exercises are good, as is also the so-called corner exercise, in which one stands in the corner of a room, about two feet away from and facing the walls, places one's hands on the sides of the walls and bends forward toward the wall, holding the head back. This stretches the pectoral muscles, which sometimes are too short. This is mostly a passive form of exercise. Active exercises, those which give work and consequent development to the erector muscles of the spine and upper part of the back, are better. An excellent exercise of this type is that in which the person lies prone on the floor or cot, places his hands behind his back and forcibly raises his head and shoulders for a few seconds, then rests and repeats the exercise until somewhat fatigued. If some resistance is applied by another person, the exercise is more powerful. For best results all exercises for correction must be practiced many times a day and over a long period of time. Best of all exercises is the constant practice of holding oneself in erect posture while walking and sitting. Posture in sleep is also necessary. High pillows should be avoided.

It must be mentioned that breast stroke swimming is an excellent exercise for posture, because in this sport one must necessarily assume a good position, with the head held high and the chest expanded.

There is a commercial as well as a health value in good posture. One's personal appearance counts much toward one's success in life. It is only by constant training and conscious effort that one reaches this desirable goal. Correction in the early years of life is of the utmost importance. Nearly every baby is well formed at birth, but his troubles begin when he attempts to sit up and later to walk. The erect carriage is acquired laboriously in the first few years of life. The child's brain and nerves are concentrated on the act of maintaining his equilibrium. The first fifteen years are the most important in securing habits of good posture. Growing up is no easy task!

Max Kettel, Geneva

MR. RENAUD, THE DEAN OF OLD-TIME WATCHMAKERS OF GENEVA, SWITZERLAND, PLIES HIS TRADE DESPITE THE INROADS MODERN INDUSTRY HAS MADE ON HIS WORK.



FATHER KNICKERBOCKER PRESENTS A NEW "SILENT RADIO" TO MAYOR FIORELLO H. LaGUARDIA TO HELP PROMOTE HIS ANTINOISE CAMPAIGN.

D. Deutsch

THESE CHILDREN ARE REAPING THE BENEFITS OF THE SUN'S RAYS WHILE LEARNING THEIR LESSONS AT THE ROLLIER SCHOOL LOCATED NEAR LEYSIN, SWITZERLAND.

Willabel Cole Mitchell

DON'T LET YOUR SICK CHILD BECOME A PROBLEM CHILD

ANY ONE who has taken care of an ill or a convalescent child knows that illness is often accompanied or followed by perplexing behavior problems. Many times such problems could have been avoided had their possibilities been known in advance. The following information has been gleaned from observations of many sick-a-bed children and may be an aid to those adults who believe in the old adage, "Forewarned is forearmed."

Perhaps the most common and best recognized effect of illness in childhood is its tendency to make children overdependent. Two year old Mary, for instance, who has just recovered from measles, still expects her mother to feed her with a spoon, though she is now physically well and able to feed herself. Four year Billy, who has lately had scarlet fever, expects help with his clothes, despite the fact that he had been dressing himself before the fever occurred. Sally, who was characteristically described as "sweet and cooperative" before her illness is now described as "spoiled." Not only does she expect to be waited on, but she goes to drastic ends to gain her way. Such examples make many of us think that the child who is ill will unavoidably be spoiled when he becomes well.

This obviously is not the truth. It is not so much the illness which does the mischief as it is the adult's thoughtless enjoyment in giving the sick child all sorts of superfluous as well as necessary help and attention. Illness does not cause a loss of independence if one is careful to let the child do all that he possibly can for himself, especially during his convalescent period. When the child is critically ill dependence is, of course, inevitable. But if responsibilities are gradually turned over to him while he is regaining his strength, at the end of convalescence the child will be as self reliant as he is physically well. In other words, convalescence can be regarded as a time in which to help the child resume normal responsibilities as well as regain his physical strength.

Some guidance in knowing what the sick child can or cannot do is, of course, necessary. The best guide as well as the ultimate goal can be found in the literature on what well children of from 2 to 6 years can do. The sick child will of course not be up to this level. So we shall have to lower our standards on the basis of our physician's advice or our own common sense. In general, we can let the child's lack of interest or signs of fatigue or tension serve as warnings as to just how much we can expect him to do.

Those of us who have worked at all with sick children know that we must always keep a lenient rather than a critical attitude toward their performance. We are interested not so much in seeing that the child feeds himself

without spilling or dribbling food as in the fact that he feeds himself at all. While lenient in our expectancies, we are firm in our insistence that the child try to help himself as much as possible. Personality and behavior habits are an important part of any child's make-up, and it is liable to be a one-sided adult who will prevent all self help on the part of the convalescing child for fear he will overdo.

We can begin to help the child regain self reliance even in the sick-a-bed stage, not so much by giving him actual duties as by making him feel that he shares responsibilities. This may mean nothing more than helping him attend to a given task, as for instance having him watch while we put on or remove his clothes. It may mean giving him the simplest sort of share in the job, such as holding the instrument while we make an examination, holding the glass while we pour the medicine or holding the soap while we give him a bath.

This policy of letting the child have a feeling of responsibility even though he contributes little to the actual job can help prevent or overcome a second problem common in sick children: a fear and an unwillingness to cooperate in any situation involving a doctor and medicine.

A surprisingly large number of children who are brought to hospitals seem to possess such a fear. A recent study has indicated that much of this fear and lack of cooperation can be overcome if the child feels he is an active participant in the situation; in other words, if he is allowed to help. In the study mentioned, resistance to taking medicine and to routines was found in only 3 out of 100 situations in which the child was given a chance to help. Resistance was found nine times as often when the child was not given such an opportunity.

Another common behavior difficulty which shows up during the sick-a-bed period is an increase in self handling. In older children who must be in bed this tension is more likely to take a socially accepted form in the so-called nervous habits, such as biting nails, picking ears, playing with fingers or pulling and twisting hair. At the preschool level it more commonly takes the form of thumbsucking or of masturbation.

We need to recognize the fact that a long stay in bed is liable to make for such behavior. In a recent research study, in which observations were made on the behavior of sick children of from 2 to 6 years of age, self handling or masturbation was the problem most commonly found.

It is easy to see why a long stay in bed may lead to self handling. Children are naturally active. When they are prevented from using their energy in other ways they naturally direct it toward the only remaining possibility—themselves. In doing this they are simply reverting to behavior which is more or less typical of a level they should be past: the infantile period. Research studies as well as experience have shown that the simplest and most effective way of avoiding or overcoming self handling or thumbsucking during the sick-a-bed period lies in the provision of adequate play materials which are suited to the child's age and physical condition and which may at the same time be easily used in bed. In the study previously mentioned it was found that there was six times more play with self when no play materials were available than when adequate play materials were at hand.

If we see that the sick-a-bed child has the proper play materials we can avoid another problem commonly met by the pediatric nurse: the need for keeping the convalescent child from engaging in excessive forms of activity such as jumping, climbing and running. This was the second most frequent problem found during observation in hospital wards. It was five times more frequent when children were left to their own devices than when adequate play materials were provided.

If the nursery school child's illness is prolonged it may hinder his mental development as well as his behavior adjustments. Lack of varied experiences during illness is especially liable to hinder language development. The meager vocabulary and concepts of one group of children who had been ill at irregular intervals since birth illustrates this point. A teacher in this particular group brought one of the children a toy as a gift for his birthday. In great eagerness he pulled the wrappings from the gift—and then his mouth dropped, and he began to cry. "Why, what's the matter, John?" asked the surprised teacher. "It's not a birthday!" piped up two of the children in adjoining beds. "Birthday" to these children meant only one thing: a cake!

This lack of experience during illness also tends to make for a disinterest and apathy on the part of the child who has been ill, which is not typical of healthy runabout children. The child may actually seem to have forgotten how to play! We can avoid such unfortunate results as these if we keep aware of the normal, everyday experiences which the sick child is missing and try to supply these through stories, pictures and other experiences we can provide.

In short, the best safeguard against any of the problems mentioned, whether it be dependence, fear, self manipulation, excessive activity or mental sluggishness and retardation, lies in correct handling of the convalescent period. Encouragement of self help during convalescence and provision of adequate outlets for the child's energy and interests are as important for mental health as is proper exercise for physical health.

By ROSE H. ALSCHULER
and LaBERTA A. HATTWICK

RABIES A Plea for Conquest Through Cooperation

JULY—a hot, sultry day! Two streams of human traffic ebb and flow at one of the busiest corners in the city. From the congested, moving mass suddenly comes a shriek of pain. Cries of "Mad dog!" explain the shriek, while fear-stricken people rush here and there in confusion. As the scene clears, a woman is seen on the ground, holding her ankle, the skin lacerated by the animal's teeth. A man stands with a blood-streaked, bitten hand by his side. The terrifying cries of a child reveal a youngster with face torn and lacerated. Near them, a dog, foaming at the mouth, runs aimlessly. A police officer appears with a drawn revolver, and in a moment the dog is killed.

A similar scene may happen any time. Every one should know how to lessen the danger from mad dogs and what to do when a dog bites.

If you have been bitten by a dog, no matter how slight the bite, and even if you believe that the dog has no rabies, have the wound treated by a physician, and immediately place the dog under the observation of a veterinarian for fourteen days so that you may be certain whether or not the dog has rabies.

If the dog dies and it is found by means of an examination of the brain that the animal has rabies, the Pasteur treatment should be started at once. If the bite is from a stray dog and he has escaped, take no chances. Begin treatment as soon as possible after the bite has occurred.

Fortunately hydrophobia develops in only one out of seven persons bitten by a dog who has rabies. Rabies and hydrophobia are the same disease; it is called rabies in animals, hydrophobia in man. It is a disease caused by a virus carried in the saliva, which enters the body through the wound and spreads along the course of the nerves. The symptoms usually develop in about three weeks.

At first the wound may heal; later, the victim becomes ill, as might be expected in a disease attacking the nerves. Usually within from three to eight weeks, but sometimes longer, headache, loss of sleep, loss of appetite, fever and a feeling of depression develop. Finally the disease reaches the brain. The victim has attacks of raving; he becomes violent; he has spasms of the throat. If he drinks water, the attacks become worse. He develops a fear of the sight of water; hence the name of the disease, hydrophobia, from "phobia," meaning fear, and "hydro," meaning water. Finally paralysis sets in. The disease is always fatal.

But for a moment let us go back to the scene of the accident described. The dead dog was immediately taken to the board of health. Examination of the brain tissue under a microscope disclosed certain tiny abnormalities in the nerve cell, called negri bodies. This was a certain sign that the dog had rabies.

In the meantime, first aid treatment was given to the victims. Iodine, carbolic acid and alcohol were *not* used because they do not penetrate the tissues deep down along the course of the nerves. Fuming nitric acid was used so that the wounds were cauterized deeply. A solution of formaldehyde can also be used effectively for this purpose.

Then the bitten persons were given injections of the Pasteur antirabic vaccine, or a modification of the same. This vaccine was developed by the famous Louis Pasteur, who showed that, in a human being injected with an emulsion made from the spinal cord of rabbits which had been given the disease artificially, defense or immunity was set up against the disease.

THE Pasteur treatment is effective only when given before the symptoms of hydrophobia appear. It is not a cure; it is only a preventive.

One of the plans, generally used at present in administering the antirabic vaccine, is to give two injections a day for seven days when the bites are on the hands, face or neck or for exposed bites anywhere. Then one injection is given each day for two weeks thereafter.

In cases of bites through the clothing, two injections a day are given for the first week, and one injection a day is given for another week.

If there is a rabies epidemic among the dogs in a community, it may be well to start giving the antirabic vaccine at once to any one who is bitten, without waiting for a report as to whether the animal is rabid. If it is found later that the animal is not rabid, no further injections need be given.

Thousands of people own dogs. If your dog is your friend and you are his friend, take care of him; treat him fairly; do not let him wander where he comes in contact with stray dogs and where he may be bitten and given rabies. Keep him on a leash when he is outdoors.

Rabies and hydrophobia can be prevented. No one wants to destroy dogs wantonly and deliberately. Such a procedure is unnecessary if the people who have dogs cooperate with the constituted authorities. Stray dogs are a menace to your dog and to your child as well as to others, and they may be carriers of rabies.

Thirty-seven years ago, in one of the worst rabies-infected areas in Paris, more than 600

LOUIS PASTEUR, ARCHFOE OF HYDROPHOBIA

persons were treated for this condition. Today, there are few such cases there. Rigid licensing combined with the elimination of stray dogs accomplished the result. Today we are faced with the same problem. We know how to get rid of rabies and hydrophobia. It will take determination and full cooperation of the people to wipe out this scourge and the fear that hangs over every mother's head when the warm summer days permit more dogs to roam at will and thus seem to stimulate an increase of mad dogs.

By HERMAN N. BUNDESEN

HEALTH RESORTS

By ANNE BRECKINRIDGE

IT IS a far cry from the days when a train journey was a costly and tiring expedition, when automobiles and roads broke down with irritating frequency and the airplane was a risky adventure. Now we take for granted the efficiency and low cost of travel, and America is "on the go."

One of the most familiar sights on our highways today is the trailer. It is rapidly becoming a symbol of freedom and ease of travel for the middle-income family or individual. As we watch one go by, our casual thought is, "Here are people on their way, the country 'for to admire and see.'" Yet a goodly proportion of the traveling population is made up of those who seek a different environment, not for pleasure but to regain health. And the majority cannot afford to lose time and money by choosing a climate which proves to be unsuited to their needs.

All too often, however, they do choose the wrong climate, and their health and their pocketbooks suffer. There are a number of reasons for the mistake, which could be avoided if some light were thrown on the situation.

When the average person is told by his doctor that he must live in a different climate to recover his health, he finds himself in the following situation: First, his knowledge of health resorts is vague. He has heard that such and such a place is wonderful; that the sun shines all day, every day; that so-and-so went there and came back a new man; that the scenery is beautiful, and so on.

His doctor's knowledge is apt to be just as vague. He feels that his patient cannot make the progress he should in his present environment; how about X? He knows of several doctors there who are doing splendid work in his patient's disease. Nine times out of ten he has never seen the resort and knows little about the actual climatic conditions.

Then there are the well meaning friends who have visited the resort for health or pleasure. It was a lovely place. They are sure John will thrive there.

After all this, John too begins to feel that he will thrive there; and his next step is to write to

the resort's chamber of commerce or "booster" organization. They send him a courteous and welcoming letter, enclosing folders which praise the climate to the skies, describe the picturesque scenery and elaborate on the sanatoriums, the doctors and the number of health seekers who come there year after year. John may smile at the enthusiastic adjectives; but hope springs up in his heart, and he finally sets forth for this wonderland which will conquer his distressing illness for him practically single-handed.

If he is lucky, he will arrive there, settle down and improve. It will have to be luck, for he has had no definite, authoritative advice to justify his choice. There are jokers in the pack.

His own doctor does not really know the climate. It may be wonderful for a number of diseases but not for John's. Certainly there are fine specialists at the health resort. But are they specializing because they have found the climate that will cooperate with them, or is it because they have been besieged by such numbers of people with this disease that they have been forced to acquire the specialist's knowledge and skill to combat it? Many a resort has been started for one disease, to wind up as a cure-all climate.

John and the well meaning friends are laymen who do not stop to consider that they are not medically equipped to know what the various benefits and irritants for an ailment may be.

Neither is the resort's booster organization. It tells the truth about the climate as far as it knows; but it cannot be expected to know the whys and wherefores of climatic conditions in relation to disease.

An amusing example of this can be shown in the true story of a man suffering with hay fever which was brought about largely by exposure to ragweed pollen. He wrote to a state tourist information bureau, asking whether ragweed were a common plant throughout that state. What the tourist bureau's explanation was for this question will never be known. The inquirer thinks they believed he was a second Luther Burbank, for he received an enthusiastic reply. Oh, yes, they had plenty of ragweed! All over the state, in any town, on any vacant lot—and lots were very reasonable. Wouldn't he visit them soon and see for himself? This unwitting service is funny, but the bureau cannot be blamed for not knowing that ragweed pollen is one of the most common precipitants of hay fever. The bureau is not made up of physicians and should not be required to function as such.

To return to John. What then, is he to do? He cannot spend unlimited amounts of money

to move about from one place to another, as the wealthy person may.

He can, however, do this. He can ask his doctor to write to a doctor in the resort, describing John's case and requesting advice on the advisability of a visit there by his patient. Then, and only then, will John receive the exact information he needs. It is the doctor who lives in the resort who knows the reactions of different diseases to the climate.

He knows from years of observation the types of patients who cannot stand that particular altitude. He knows just how good the local sanitation system is, what epidemics have been most severe in the region and what part the climate has played. He knows whether the amount of irrigating done in a community known to the rest of the country as "dry and sunny" is heavy enough to change the atmosphere into a damp, chilly one, bad for rheumatism, arthritis or any other disease affected by wet or cold.

If John is suffering from an allergic disease, asthma, hay fever, sinusitis, eczema, colitis or migraine headache, the resort physician can tell him whether the place is windy and dusty; how well paved the streets are; when the first pollen-killing frost comes; when spring pollens appear and the duration of their season. Tourist booklets will not tell him this; neither will statistics on temperatures. Yet these are matters of vital importance to sufferers from the aforementioned diseases. One has only to visit one of the best known health resorts in the country to see how ill informed the general public is. This region is filled in September with asthmatic patients and other allergic patients who, for the most part, plan to stay at least six months. No one told them that the first frost does not kill the fall pollens until the end of November and that from February through April, one pollen after another will be in the air. At no time is this resort free from dust. Had they known this, how many of these people would have chosen this particular resort?

The resort physician can also tell John how easy it will be to find proper living quarters. If he is to make a winter visit, he must consider the heating problem. There are cold mornings and chilly evenings in the southernmost climate. Will the patient find a place within his means which furnishes the right type of heat for him? For example, the arthritic person and the man suffering with trifacial neuralgia need an even, steady heat. The allergic patient cannot live in a house heated with open registers or stoves, which blow dust about the rooms. Yet houses in many southern resorts are equipped with this type of heat, and closed registers and gas stoves are at a premium.

Diet is another item. If John boards, what do most places charge for preparing special diets? If he can afford a hotel, how good is the food there? If he plans to do housekeeping, how do food prices compare with those in his home town? Every item of living expense should be checked beforehand, and the resort doctor is in a position to find out from his out-of-town patients what these expenditures involve. Their figures will mean more to John than any tourist folder or real estate agency list.

It may seem to be asking a great deal of the resort physician to answer all these questions. However, he is glad to do so. As a conscientious physician he does not like to see people fight a losing battle against climate; and from his own point of view he will be glad to have the heavy load of patients thinned out to those who will benefit not only from his treatment but from the environment. He is swamped with climatic misfits whose progress is retarded when it should be going forward. The money he makes from these patients is not an adequate reward for the time, energy and thought expended on them. He is interested most in their welfare and knows that money and physical reserves have been used up to maintain the patient in the condition in which he arrived, instead of bringing about steady improvement and a cure. The fewer patients he has of this type, the freer he is to devote all his attention to the diseases that are helped by the climate.

And the resort itself? Well, disgruntled and dissatisfied persons are never good advertising for any community; neither is an unnatural overcrowding of living quarters and schools. Resorts are prepared for a certain extra load. Beyond that the load becomes a burden.

By taking the precautionary measures suggested, John will help himself to health, the doctor to greater usefulness, and the resort to expansion on a sound basis.

CATHARTIC-CONSCIOUS AMERICA

By LEMUEL C. McGEE

THE ESTABLISHED habits of the race are potent regulators of one's private and public behavior. There is, in man, a deeply rooted disinclination to change life's routine. This apparent inertia seems at times to be advantageous to the welfare of the individual; yet at other times it is clearly disadvantageous.

It may be assumed as evident that definite changes in some American habits are indicated by the increasing knowledge of human physiology, for the present customary management of the lowly bowel is as scientifically medieval as the lack of intelligent control of syphilis. A widespread misunderstanding of the accumulated facts concerning the physiology of the digestive system contributes to this state of affairs. This is, in part, a result of an American social philosophy which debars open discussion of the fascinating intricacies of the human body under the same circumstances in which styles in clothes or automobiles may be discussed.

The most unmechanically minded college graduate knows more of the principles of an internal combustion engine than he is likely to know of his own abdominal viscera. He usually does not know what organs there are; much less their approximate locations. Even if he is fortunate enough to have had an introductory course in physiology, his intestinal concept, strikingly, is apt to be of a mass of tangled garden hose behind the open abdominal flaps of the frontispiece figure on an old household almanac.

A mastery of the detailed ramifications of intestinal physiology cannot be achieved without long study. However, the average thoughtful person can understand enough of the puzzle therein to sense the gross artificiality of the irritating action of any laxative drug, however mild it may be.

The heart beats for our entire life because of certain properties inherent in the muscle of the heart and involuntary nerves ending there. We cannot *will* our hearts to beat slowly or rapidly in any *direct* manner. A sudden fright will so affect the nervous system as to cause the heart to beat more rapidly for a time.

The gastro-intestinal musculature likewise is endowed with an autonomic mechanism. One cannot voluntarily cause ingested food to pass from the stomach to the small intestine or from the small intestine to the colon. Nor can one voluntarily stop that process. However, indirectly, any emotional disturbance affects the behavior of this muscular digestive tube. If an individual sees a bloody fight on the street corner or a child run down by an automobile, the resulting emotional disturbance may delay for a time the motor, or propulsive, action of his digestive tract. Such an individual may vomit or be unable to sit down to his dinner because his stomach has not emptied itself of the preceding meal. Under normal behavior the digestive food is propelled along the intestine by rhythmic contraction waves encircling the soft, muscular tube. The digestive glands of the small intestine pour into the tube several gallons of water during a single twenty-four hour period. This digesting mixture is of the consistency of a thin gruel as it empties into the large intestine, the colon, which begins 4 or 5 feet from the lower end of the digestive tract. In the colon the large amount of water is reabsorbed, leaving a more concentrated food residue which achieves a pasty consistency in the last 12 or 18 inches of the tube. Hence the processes of constipation can occur, in nearly every instance, only in the very last portion of the 20 foot tract. Is it not illogical to punish the first 19 feet of the tract simply to move a mass of residue in the lowest foot?

The idea of "cleaning out the system" periodically is a popular misconception. The colon of no species of vertebrata is ever normally empty. The important need of the body to recover the water from the digesting mixture requires the colon to retain the residue sufficiently long for absorption of fluid. This residue is properly eliminated only as the colon becomes slightly overdistended and as its contents are forced into the lowest portion. There is no "cleaning" to be done except in instances so rare that the average healthy American citizen need not bother about them. The colon is not a sewer within the abdomen but an integral part of the digestive apparatus. The chemical changes within the food residue while the latter is in transit through the body are normal and essential to a healthy person. The bacterial content and action differs in many important particulars from that which develops when once the residue is outside the body. Too often one does not pause to consider all this when there arises the question of taking a laxative at the retiring hour.

Constipation is not a disease but a symptom of many diseases and hence is not to be managed by general suggestions to cover the entire group of people so afflicted. It is well to know that the frequency of fecal elimination is

an individual affair. While the majority of adults pass a portion of the contents of the colon one or more times daily, there are perfectly healthy men and women who do so no oftener than once or twice a week. The concept of a necessity for elimination more than once daily has led many perfectly normal adults to use cathartics unnecessarily. The amount of evacuation is absolutely inconsequential, if its consistency is normal. The bulk is determined by the unabsorbed and unabsorbable elements in the food residue and bacteria, which are always present and partake in the normal gastro-intestinal behavior. As the character of the food and the degree of absorption varies from day to day, so must the bulk of the stool vary. Thus one may properly conclude that the colon usually does not need the help which is too often given!

The human intestinal tract has had to adapt itself to a variety of evolutional modes in past centuries, including a complete change in the center of gravity when prehistoric man assumed the upright posture. Not only does it care for the first steps in the process of nourishing man, but it is made to perform this physiologic task, for a large part of the population, under the severe lashing of cathartic drugs. The cathartic devotees are not limited to any one ethnic type, occupational group, political, economic or social stratum of mankind, though the so-called "white collar" and the designated "educated" classes in the sedentary occupations of American life seem to lead the field in our per capita cathartic consumption. This state of affairs exists despite sufficient physiologic knowledge of the motor function of the stomach and bowels to correct it.

Primitive medicine grew out of man's superstitious and fanciful concept of the universe. Treatment of disease early came under the regulation and direction of organized religion and for centuries was advanced only by an occasional shrewd guess born of the experience of pragmatists.

The physician, from lack of anything better, once used incantations, appeals to stars and endless mixtures of plants and animal parts to effect a cure in the sick. The mouth, as the most logical inlet to the body, received the bulk of the concoctions. The most discernible results were vomiting and purging, if a given concoction contained sufficient chemical or physical irritation to throw into an uproar the 20 feet of hollow muscle tubing that constitutes the central part of the digestive system. Vomiting and purging were, and are, striking effects. The patient could feel, and his family could see, the consequence of the doctor's efforts. If the sick man recovered, from an inherent tendency for the disturbed body to right itself, the doctor received due credit. If the sick man died, the devil of which he was possessed or the gods by whom he was cursed were more powerful than the doctor's medicine. Until well into the last century the medical profession's chief procedures were to induce vomiting, to purge and, likewise an impressive method, to bleed. However, man's physical mechanisms were so well established that he managed to survive all this dramatic therapy.

THOUGH THE ROD MAY BE SPARED IN THE MODERN TECHNIC OF REARING CHILDREN THE CATHARTIC BOTTLE FLOURISHES THE SAME AS EVER.

With the development of a physiologic basis for the physician's efforts to help his fellow man, the production of vomiting and the extraction of large amounts of blood have been relegated to a small and proper place in therapy. Oddly enough, however, the device of purgation has persisted.

The susceptibility of men and women to the printed word, particularly in advertisements, has increased the use of cathartics. The margin of profit on the sale of laxative drugs is large. Their small size and ready adaptation to mass production makes their preparation worth while to the investor in the business. It has been shown rather definitely that the people of the United States spend about $360,000,000 annually on medicines of secret composition, "patent medicines." Another $165,000,000 is spent annually for nonsecret home remedies, such as castor oil, epsom salts and the like.

With a satisfactory sales organization, a well planned national advertising campaign and an attractive name, a palatable laxative can make a fortune for its owner. To the commercial world the season is always open on the buying public. Whether a product is needed is of small moment—will advertising sell it? In the advertising of drugs all usual mediums are employed. To make a cathartic preparation economically eminent, a synopsis of common aches and pains and a new name for a widely prevalent malady may be furnished in the advertisement. The fatigued and harassed prospective buyer ponders then on the sensations of discomfort about his person, makes his own diagnosis and stops in at the nearest vending place for the drug. If efficient advertising has created the demand, the retailer must stock his store to supply it. As for the purchaser, a subsequent night's rest aids the disappearance of his symptoms, but the palatable cathartic is credited with the "cure" and so scores another success. The ailment returns, and the purchase is repeated. Soon the individual becomes a cathartic addict. He depends on the drug and comes to use it as a crutch for his intestine. He is in the same category as a man with normal legs which are ineffectual for walking merely because of a long disuse. The latter cripple uses his crutches from fear of falling and does not train his legs to carry his body as they normally should and would if given an opportunity.

A prevalent symptom-complex in our society is a recurring malaise accompanied by a severe headache and nausea. This is known to many intelligent laymen as migraine. Fortunately the minor physical evidences of this disorder rarely cause an individual so affected to need medical aid. But the fallacy that improper evacuation causes headaches promotes the use of a cathartic, and the havoc arising from the fixation of the victim's attention on his intestinal tract often leads to his needing medical treatment. This field of the neuroses is pertinent in the matter of constipation because of the readiness with which man may center his attention on his abdominal viscera. Thousands of healthy men and women are deeply impressed by a display card suggesting to them that their "elimination is faulty" and introducing to them the term "intestinal hygiene." As Pope declared,

> A little learning is a dangerous thing;
> Drink deep, or taste not the Pierian spring:
> There shallow draughts intoxicate the brain,
> And drinking largely sobers us again.

When advertising selects a vulnerable sphere, such as an individual's desire for maximum efficiency in a necessarily competitive world, great harm is done in the catharsis of America. Men and women are reducing rather than increasing their physical and mental efficiency by recourse to the laxative drugs. The truth of this assertion will be attested by any physician skilled in the understanding and relief of disorders of the gastro-intestinal system. A large part of the work of "stomach specialists" lies in the correction of disorders of function of the large intestine occasioned or aggravated by too frequent use of the cathartic drugs.

This habit of self medication follows the noteworthy fact that many normal men and women feel a complacent certitude in the permanency of their state of health. The average American citizen with a minor indisposition rarely consults a physician until all available home remedies have been tried. The majority of these remedies contain one or more laxative drugs. A man with sufficient intelligence to consult his lawyer after arrest for a traffic violation and to request the advice of his banker or broker before purchasing a five hundred dollar bond, will treat his dyspepsia without advice—and with greater success, as nature is far kinder to a transgressor than are the courts and bond markets.

There are hundreds of thousands of gravestones recording a premature death brought on indirectly by the injudicious use of cathartics. A pain in the abdomen may be an unrecognized appendicitis. Treating this with a physic has too frequently caused the increased motor activity which forced infection from the region of the appendix throughout the abdominal cavity, giving rise to a peritonitis which has an extremely high mortality. Every thirty minutes some one in the United States dies of appendicitis. Nine out of every ten of these are dying because they tried cathartics for the relief of pain in the abdomen and delayed going to a hospital. They do not need to die; yet because of what William Osler termed "that most injurious of all habits, drug taking," they do die.

In nearly every home in America the occasional administration of a laxative to the growing child is considered a parental duty which, unfortunately, is rarely neglected. The rod may be spared in the modern technic of rearing unrepressed, inferiority-complex-free children; but, alas, the cathartic bottle occupies just as important a place in a child's growing up as it ever did. And this in spite of the fact that our knowledge of intestinal physiology is older and better founded than the physiologic basis for the most useful tenets of child psychology.

The first thought in treating a common cold is usually a laxative. Why purge the intestinal tract when the apparent infection is in the nose and throat? While many properties of the cold virus are unfathomed, there is established not one jot of scientific evidence indicating that the illness is primarily in the colon. When the bowel fails to behave properly in the presence of an infection in another part of the body, severe irritation is clearly not the aid which nature requires for the return of normal function. Repeated use of a laxative drug renders the tract either more sensitive, that is, hyperirritable and unstable, or less sensitive, depending on the individual and the particular drug. In either instance the motor function of the colon is seriously handicapped, and any one of a variety of abdominal discomforts may be the subsequent reward.

Pharmacologically, these drugs have been classed as aperients, laxatives, purgatives and drastics. The classes differ only in the increasing vigorousness with which the colon responds for evacuation. A drug may be laxative in small amounts and drastic in larger doses. Most laxatives stimulate the bowel musculature to contract by a chemical irritation. This is rarely necessary in disease. If poisonous or irritating food has been ingested, the tube empties itself rapidly and repeatedly until measures are taken to soothe the inflamed, sensitive intestinal lining. Only in rare types of poisoning, where the bowel is not sufficiently stimulated to evacuate itself, is additional artificial stimulation of any merit.

Some cathartic drugs act by increasing either the solid or the fluid content of the intestine. The various laxative waters contain dissolved mineral salts, the most common and effective of which is Glauber's salts, or sodium sulphate, the "horse salts" of the veterinarian. A few cents' worth of Glauber's salts will make barrels of a reasonably distasteful "mineral water." These waters prevent the normal reabsorption of fluid in the intestine and thereby give rise to a more voluminous and more watery stool. Why increase the bulk artificially when a wholesome meal will accomplish this today just as it has accomplished it for man in past thousands of years? Some laxative preparations tend to soften the contents of the gastrointestinal tract. Such preparations usually are oily and will not mix with the watery medium of digestion. They interfere demonstrably with the chemical reactions necessary before man can absorb the required parts of his meal.

As a well adapted depot to retain residues of digestion in a compact form for disposition at a convenient time and place, the colon is one of the greatest somatic luxuries we possess. To a needless extent it receives the reprobation and damaging therapy for countless human ills. Soon after the cry of birth it receives abuse which continues in various forms and fashions until the hour of death. The colon is poorly appreciated in cathartic-conscious America.

Forecast for September

"How Do You Read?" modern technics for measuring the efficiency of reading habits, explained by *Eliot D. Hutchinson.*

"Sane Manias," interesting sidelights on the hobbies of the great and the near great by *S. R. Winters,* who discusses hobbies for varied personalities and finds in them a rest cure both for overtired and for understimulated nerves.

"Dressing Up the Diabetic Diet," menus and recipes contributed by *Julia A. Sample* to relieve the monotony and add zest and appeal to the food of the diabetic.

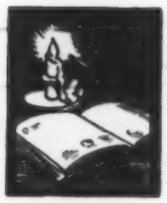
"What Can Be Done for Arthritis?" a question answered by *Dr. M. H. Dawson.*

"The College C(o)urse," a study of square pegs and round holes. *Regina J. Woody* stresses the folly of indiscriminately forcing children into the "college prep" mold and the wisdom of fitting the educational course to the child and his present and probable future needs rather than attempting to fit the child to the course.

"Sinus Disease," its causes and treatment discussed by *Dr. Lewis J. Silvers.*

"Teaching Children to Lie," the background of children's lies, analyzed by *Dr. Everett S. Rademacher,* who points out that patterns of misdemeanor are often unwittingly set by parental example.

New Books on Health



THE BOY'S BOOK OF STRENGTH

By C. Ward Crampton, M.D. Cloth. Price, $2. Pp. 257. New York City: McGraw-Hill Company, Inc., 1936.

THIS book is divided into twenty-six chapters. Ten of the chapters have a progress and achievement record to be filled out by the young reader which relates to the subject matter of the chapter. For example, the chapter relating to immunity and germ diseases has appended a chart to be filled out regarding the immunization injections, tests and common germ diseases the boy has had; the chapter relating to teeth includes a chart pertaining to the type of mouth hygiene of the youngster, the condition of his teeth, the dental work done and so forth.

Dr. Crampton is a practicing family physician and one of the founders of the Public Schools Athletic League. He is also a member of the Committee on Health and Safety of the Boy Scouts of America and contributes a monthly page, "Keeping Physically Fit," to *Boy's Life*. He has been engaged in many other similar activities and has the combined point of view of athlete, coach, physician and teacher.

The material in the book is based on the articles that Dr. Crampton has been contributing to *Boy's Life*, the official magazine of the Boy Scouts of America. It is an effort to give boys of preparatory school age a program of health management based on their own experience. The style has been described as good "boy talk." The scientific basis of the work is sound, and scientific terms have been translated into ordinary "high school" English. Examples are given of the achievements of well known athletes and around these are built the psychology and physiology that relate to the incident. Many subjects are discussed, including heredity, daily exercises, diet, sleep, posture, the physiology of the various organs, colds and communicable diseases. One chapter devoted especially to mental hygiene is under the caption of "Courage." Specific exercises and tests are given and accompanied by some pen and ink sketches. Nothing is mentioned about the physiology of reproduction or sex hygiene. Perhaps it has no place in such a book.

This book contains a scientific discussion of material pertinent to the preparatory school boy, written in understandable "boy talk" style. It should make instructive, entertaining and enjoyable reading. The only question in mind is whether the average adolescent boy of today will take the time and effort to read and attempt to follow the hygienic instructions, unless the reading is definitely required as part of a course in physiology and physical hygiene under such auspices as the Boy Scouts or similar organizations.

JOSEPH K. CALVIN, M.D.

PREVENTIVE MEDICINE AND HYGIENE

By Milton J. Rosenau. Sixth edition. Cloth. Price, $10. Pp. 1481. Illustrated. New York City: D. Appleton-Century Company, 1935.

IT MIGHT merely be said, as it is stated in the preface, that this book has been extensively rewritten and entirely reset and that its author has edited it with a view to keeping it up to date. For the first time, sections are included on contraception, maternal mortality, heart disease, diabetes, ringworm, snake poisoning, silicosis, periodic health examinations and hospitals. Practically every other section of the book has been revised and modified in order to include the results of new investigation since the fifth edition appeared in 1927.

The contributors of special chapters on special sections include many whose names are widely known for their special work in the fields which they here discuss.

MORRIS FISHBEIN, M.D.

THE PREVENTION AND CORRECTION OF READING DIFFICULTIES

By Emmett Albert Betts. Cloth. Price, $2. Pp. 402. Evanston, Ill.: Row, Peterson & Co., 1937.

THIS book of sixteen chapters and various appendixes makes an early bid for sympathy by being dedicated to "misunderstood children." It purports to be a psychologic analysis of the reading difficulties that are encountered in school life, and it bristles with pseudoscientific terms. Each chapter is concluded by a formidable list of references, of which a large proportion are publications by Mr. Betts; some are from standard psychologic journals and texts, and the rest are a miscellaneous lot.

There are a few references to well known ophthalmologists who have published books on these subjects. But the majority of the medical statements in the text are either inaccurate or hopelessly garbled, as for example in the glossary, "antimetropia" instead of anisometropia: "hyperphoria, the condition in which one of the eyes deviates upwards"; and "retina, the nervous layer of the eye," and so on ad nauseam.

On page 150 is an analysis of the limitations of the Snellen Chart Test. The author then refers to the "Betts Ready to Read Tests" and for the next twenty pages provides a complete description of the Betts Telebinocular and its marvelous accomplishments. He really outdoes the glib talk of the average salesman of the Keystone View Company which manufactures this universal therapeutic machine, guaranteed to cure all ocular ails. In fact, the last seventy-two pages of the book form the basis for the sales talk that is putting this glorified stereoscope into the hands of school superintendents and nurses all over the country for the purpose of diagnosing the ocular ailments of the children. Part of this talk consists in a vicious condemnation of the standard Snellen Test Chart.

HARRY GRADLE, M.D.

(Continued on page 756)

[NOTE.—Books reviewed or mentioned on this page, other than those published by the American Medical Association, should be ordered from booksellers or direct from the publishers. They may not be ordered through HYGEIA or the American Medical Association.]

TENNIS FOR ANY AGE

Part 2 of an article in which DUDLEY B. REED advises that, though the sport may be competitive before 40, it should be recreational after 40

Acme

AS TO singles strategy, speed and placement are generally regarded today as the important elements of effective service, at least of the first service. For a first service those with a heavy twist like the "American twist service" and the "reverse twist" have been abandoned quite generally because the twist reduces the speed and because good players soon learned to allow for the peculiar bounce and to "kill" the twist. As to placement, the service may well go to the opponent's weakness if one has been discovered, usually his backhand. In the absence of such a weakness the most effective place for the service is directly at the receiver, as it is more difficult for him to play it well when stepping away from the ball than when stepping into it. Of course the placement of the service will be varied somewhat, particularly if one's opponent shifts his position to cover up a weakness. In general it should be remembered that the net is lower at the center and a fast service is more likely to strike in court if played there. Partly for this reason and partly to obtain a more advantageous vertical angle the server will stand as near the center of his base line as the rules permit.

In order to avoid double faults most good players use more spin and less speed on the second service; it should be remembered that a double fault is one of the quickest ways in which to lose a point, and it gives great psychologic satisfaction to the enemy. Our player should not take the net on his service as that is an exhausting procedure which belongs in competitive and not in middle-aged tennis. When taking the net later in the play it is best to go in after a deep shot to the opponent's backhand if he has a weakness there, otherwise after a deep shot to the center of the court as that position reduces the available angle for his return. In general the effort should be to place all ground strokes deep in the opposite court, this to be varied if possible and when the opportunity arises by a crosscourt shot

or the drop shot just over the net, which that master shotmaker, Tilden, has used so well.

Doubles is a very different game, astonishingly different considering that it is played on a court of the same length and nearly the same width, with the same net and equipment, about the same shots and the same ways of winning points—these ways being but two: making placements out of reach of the opponents or forcing them into errors. This difference in doubles arises from the fact that the doubles court is 33.3 per cent wider than that used in singles, while the defenders of the court are increased 100 per cent. Therefore it is much more difficult to pass the opponents and score placements, and there is much less running from side to side of the court. The running is mainly fore and aft. For successful play from the point of view of winning, it is essential to secure and maintain the net position as much as possible, which means that the server will come in on his serve. For our middle-aged player this may involve too much running; and if he finds that he is becoming breathless or unduly tired, he will be content with securing the net position when the opportunity offers later in the play.

In doubles, unless the receiver in the left-hand court (right-hand to the server) has a marked backhand weakness, the service in both courts should be placed near the center line as this gives a less advantageous angle for return. If the server is coming to the net on his serve, a twist service without tremendous speed has its virtues since it gives more time for him to reach his position, and he will strive to get far enough in so that he does not meet the opponent's return on the half volley at his feet. In competitive tennis the players having the net position play about 5 or 6 feet from the net; and it goes without saying that the closer one is to the net, the easier it is to make a point-winning placement if one gets one's racket on the ball. It is equally obvious that it is relatively easy to lob over a man playing that close; but the competitive players are quick to anticipate lobs and active in retiring to cover them, and they have great endurance so that they can, in sport parlance, "take it," which we 50 year olds cannot. Therefore it is wiser for us to play about 10 feet from the net, thereby making the volleys more difficult but enabling us to back up slightly and play all but perfect lobs without letting them bounce, and return to the net. This crafty plan makes it possible for us to avoid giving up the net position in many cases and reduces the running.

In volleying from the net the actual point-winning shots are three: a crosscourt one out of reach of the opponents; a soft, drop shot, just over the net, or a hard smash which cannot be played either because it bounces over the opponents' heads or because it is so fast and so placed that they cannot reach it. And it is a real satisfaction to the more violent side of our natures to leap on a short lob and punish it. In general, when one of these killing shots cannot be made it is most effective to volley deeply into the opposite court thus forcing the returns to be played from beyond the base line, which means that it will be more difficult to play them accurately and that more time will elapse before they reach you at the net, both advantages to your team.

One of the familiar fundamentals of the doubles game is that partners go up and back together. If they are forced from the net by a good lob, both go back together. When opportunity offers they both come up together. The obvious reason for this is made evident by supposing that you are at the net and your partner is back. The opponents will certainly return the ball to him and take the net. If his return goes to the player opposite him, it can be crosscourted behind your back, so that neither of you has a chance to cover it.

I have spoken of the position in the long axis of the court when both partners are at the net. It may be well to mention the lateral position. This depends on the part of the court to which your last return has gone. If the return is to the center of the opposite court, you and your partner will stand about 10 feet from the net and 6 feet to either side of the center line. If the return to you is midway between you, the player on whose forehand it is should play it by preference. If your return has gone well to your right so as to draw one of your opponents out of court to his left, both you and your partner will shift to your right so that he stands in his alley but you maintain about the same distance between you. Conversely, you will shift to your left if your opponents have been drawn to their right. This is merely a matter of angles for possible returns, a mathematical thing. If one of your opponents is known to be a driver rather than a lobber or if you see by his stance or back swing that he is going to drive, you will move in closer to the net to receive his shot. If he gives away an intended lob, you will move back as soon as he starts his stroke. All these anticipations are of the utmost importance and are just as interesting to the player whose neuromuscular reactions are on the down grade as to the younger player, or even more so because he must depend on them more than on activity or endurance.

Indeed such matters are of absorbing interest in any game of this sort. For example, consider the way in which a big league outfielder will turn his back to the plate and run to the approximate spot where a long fly will drop, starting before the ball has traveled 20 feet.

On what mathematical observations does he depend to determine the place where he should be? Apparently but three: the horizontal direction of the ball as it leaves the bat, its vertical angle and some notion of the vigor with which it is hit, gained perhaps from knowledge of the batter, the looks of his swing and the sound of the impact of bat on ball. Now I submit that this is an interesting and complicated mathematical calculation for an unscientific athlete to achieve in something like a tenth of a second; but you can see it done in almost any league ball game.

SOMEWHAT this sort of thing enters into anticipation in tennis, plus a psychologic estimate of what a given opponent is likely to do. At times it becomes similar to Poe's analysis of guessing in the game of odd or even. If, in singles, a player is extremely inexperienced, he finds it difficult to hit the ball anywhere except directly at his opponent. Later, if his opponent has been drawn far to one side of the court, he will return it always to the opposite side. But when he has become old and wise he will often hit it back to the same side, knowing that his opponent will be steaming at full speed back across the court and will not be able to stop and return.

But to return from mathematics and psychology to tennis doubles, part of the time you are on the receiving side; and then if you are to receive the serve, either you and your partner should both stand behind the base line, or you should stand back and he should play a few feet in front of the service line. The decision as to position rests on your ability to make an accurate and proper return and the question of whether or not the server will run to the net on his serve. If he remains back habitually, it is always good strategy for your partner to stand in front of the service line when you receive as you will then make your return to the server in deep court and come up to the net, thus giving your team the coveted position. Even if the server comes in on his serve, this formation is safe and strong if you can be trusted usually to return the serve to the server's feet, making it necessary for him to play the ball upward on the volley or half volley. The first doubles team which I ever saw using this formation was the one composed of Norman Brookes and Gerald Patterson of Australia, and it was effective because Brookes could return practically every serve within an area of little more than a square yard at the server's feet, thus creating a situation of extreme embarrassment to said server. Lacking moderate accuracy of return and against a server who follows his service in, it is wiser for both receiving partners to stay back until a successful lob gives an opportunity for taking the net.

If your opponents are established at the net, you have available three good shots: a fast dropping one just over the net preferably to the backhand of an opponent, a fast drive directly between your opponents, or a lob. Under ordinary circumstances the ideal lob, in either singles or doubles, is one that is deep enough to strike near the base line and just high enough to be above the reach of the opponents since it gives them the minimum time to go back and play it on the bounce. However, if your own team is badly out of position when one of you lobs, a high lob is more useful as it gives you and your partner an opportunity to regain your positions on the court before it can be returned. And one more point with regard to the returning of a high lob which is sent to you comparatively near the net, in front of the service line we may say: If you are interested in winning the point, it is often better to play it on the bounce, for reasons which should be obvious and again which pertain to mathematics or physics. If the high lob is played before the bounce, the ball is falling rapidly when it reaches the racket, making accurate timing necessary in order to strike it effectively. If it is played on the bounce, you have time to glance at your opponents and note their positions; and the ball is not falling nearly as rapidly, so you may use approximately your service stroke in playing it, hitting the ball with speed and accuracy.

NOW there are players, at least in the college ranks, who seem to feel that there is something effeminate or unsportsmanlike about lobbing. They would rather go down in glorious defeat driving every ball than to besmirch their tennis escutcheons by lobbing. And often they do so go down, for many a pair of accurate lobbers have beaten teams much their superiors in all other shots. Of course lobbing is no more unsportsmanlike than trying to place the ball where the opponents cannot reach it and no more effeminate than any other shot because it requires consummate skill to lob effectively, especially since the stroke is often needed most when you are in the worst position to play it.

Just a word about equipment. No tennis player is any better than his feet. Practically all his running is done on them, and it behooves him to treat them with the delicate consideration which they deserve. Use well fitting shoes large enough to permit you to wear woolen socks. If the skin of your feet is especially sensitive, wear soft cotton socks next your feet and woolen ones outside these. And finally, remember that you are playing the game for fun. Win if you can within your comfortable physical limits, but do not detract from the grand traditions of the game in sportsmanship by losing ungraciously. Thus we close on the lofty spiritual note of sportsmanship and feet.

ANDREAS VESALIUS

(1514-1564)

Father of Scientific Anatomy

By ADOLPH BEILIN

ANDREAS VESALIUS reestablished the scientific method of ascertaining truth and gave medicine an impetus in its forward stride. Born with a gift for dissection and bearing in mind that anatomy embraces a knowledge of all animals he began the practical study of this science at an early age by dissecting many hundreds of moles, rats, pigs, cats, dogs and monkeys. He instituted the practice of dissecting the human body with his own hands while lecturing to his students, thus placing the study of anatomy firmly on direct observation of all dead tissues, organs and bones.

Andreas Vesalius was born at Brussels in 1514. He possessed a strong bent for the study of anatomy and was schooled in all the learning of his time. At an early age he was sent to the University of Louvain where, among other subjects, he obtained a knowledge of Greek, Hebrew, Latin and Arabic. In 1533 he went to Paris for the purpose of obtaining a medical education. Three years later, owing to the outbreak of the Franco-German War, he returned to the University of Louvain. During this period he obtained a human skeleton by secret means, and in 1537 he conducted his first public lecture in anatomy, performing the dissection and lecturing at the same time. Toward the close of the same year he received his degree as Doctor of Medicine.

IN ACCORDANCE with the dominant ecclesiastical authority of the time, the condition of anatomy in the Middle Ages was in the same undeveloped state as all the other sciences of that period. Anatomy was not taught by dissection and direct observation; instead the views of Galen were expounded from a book, without demonstrations or illustrations of any kind. The works of Galen and other ancient writers were at that time accepted as unfailing guides to anatomic knowledge, and it was not until Vesalius came on the scene, at the age of 30, that the idols of authority were shattered. Vesalius would trust the words of no master. He admitted nothing but that which he himself

had seen. Thus he brought into the study of anatomy the new spirit of scientific investigation, with the result that students flocked to his lectures by the hundreds.

Vesalius was the author of two great books on anatomy. Not only did his "Fabrica" lay the foundation of modern biologic science—it created an epoch. This work was illustrated with drawings of the highest artistic quality, which in themselves were a landmark in the progress of science. For executing the plates, Vesalius secured the service of one of the most gifted artists of his time. The work was published at Basel in 1543.

MAD DOG! (Continued from page 708)

lirium maybe! It's mostly dogs that bit! It's—it's—dogs mostly that spread rabies."

"What dogs? Home dogs—like Shep and Spot?"

"Oh, no. It isn't the home dogs that spread rabies hardly at all. They stay put, you see. There's some one to look after them. They have a home to stay in. It's—it's mostly the *stray* dogs, the alley dogs, that spread the disease around."

"You mean the dogs that don't belong to anybody? Is that it, Dad?"

"Yes, Son, that's it. The stray dogs that roam from place to place, hungry, abused, sleeping in the open and living on—oh, on garbage and things! They travel a long way, and they're the ones that really spread this disease!"

"To the home dogs, maybe?"

"Yes, of course, to the good dogs that we care for—and horses, cows and pigs—and to the children, too!"

"But, Dad, why should there *be* so many stray dogs around? You said you'd seen a lot more of 'em lately. Why is it?"

Dr. Smithies puffed thoughtfully. "I guess you're a little young to know history yet, Son; but—well, it's a fact that wherever dogs are allowed to run free they breed so fast that they soon just about overrun the place!"

"You mean they get to be so many that they bother us?"

"Yes, history has shown that many, many times—oh, as far back as ancient Constantinople! Know where that is, Son?"

"Constantinople! Sure! That's in Turkey, isn't it?"

"Right! Your geography teacher must be pretty good! Well, in ancient Constantinople for a long time they didn't do anything about stray dogs, as they're supposed to do nowadays, and the result was the dogs bred so fast that there were many more dogs than people. It got so it wasn't safe to go about the streets, especially for the children. The stray dogs roamed about in packs, like hungry wolves. They broke into food supplies and even attacked the children when they got very hungry. Things got so bad that the authorities finally had to do something to clear them out, so they trapped them and poisoned them and penned them up to starve, and did—oh, all sorts of hard things to get rid of them."

"My! There must have been a lot of 'em," agreed Sonny. "But nowadays we don't have that trouble, do we?"

"Don't we, Son? What about Lottie and Hebe then? Why, they're just the innocent victims of letting these extra dogs that belong to no one run around."

"How do you mean, Dad?"

"Well, you see, rabies and hydrophobia are spread almost entirely by the stray dogs. No other way amounts to anything to speak of. So the number of cases there are depends really on just one thing, how many stray dogs there are running around."

"But *why* do the stray dogs spread it more than other dogs, Dad?" Sonny asked.

"Because they are homeless, and they have to wander around foraging for food and trying to find a home, maybe. And then a mad dog happens along and bites a lot of 'em. Of course they keep on roaming, just as before. Then in a few weeks they begin to go mad. But it's a rather slow process. The germ comes out first in the saliva a week or so before the dog actually gets sick, that is, so that you could notice it. But all the time he is getting more and more restless, and he begins to run long distances. Then after a while he goes out of his head."

"Yes, Dad."

"The mad dog is a great traveler. He travels and travels! Fifty or a hundred miles maybe, and pretty soon, trying to relieve that terrible tight feeling growing in his throat, he begins to bite things! He bites anything and everything that gets in his way!"

"Other dogs, you mean, Dad?"

"Of course, lots of them, maybe fifty or a hundred sometimes before he gets through, and horses and cows—people too, he bites!"

"But do all those dogs he bites go mad, Dad?"

"Of course! At least a lot of them do. So, you see, in three or four weeks after he has been along, the disease crops up in a lot of animals—and in children, too." *(Continued on page 758)*

Cy. La Tour

The Rabbit

By MARGUERITE GODE

Of all the little pets I know
I like the friendly Bunny
Because his ears
Are, oh, so large,
His tail
So short and funny.

His eyes are bright
As amber beads,
His nose so warm and crinkly;
And when you stroke
Him on the back
His fur feels soft and wrinkly.

Through meadow grass
On summer days
He merrily goes hopping,
His bob tail
Bouncing up and down,
His long ears boldly flopping.

He chews his food
Until it's fine—
A most delightful habit.
Perhaps we could
Take lessons from
This healthy little rabbit.

"BUT IT WAS ONLY

LIKE HIVES, mumps and seasickness, a pimple about the nose is popularly classified among the laughable diseases. Yet in spite of its harmless appearance it may actually be more serious than an infected appendix.

Why? Because at least a *few* persons have learned *not* to treat an abdominal pain with a cathartic and to have that obsolete organ taken out as soon as it misbehaves, while hardly any one seems to know what should be done, and above all, what should not be done to a pimple about the nose.

Not long ago the danger from this apparently trivial affair was dramatically portrayed to me as I stood on the quarterdeck of the dreadnought, the U. S. S. *Lincoln.*

It was a glary, still morning and the gray fleet of the United States rested as if painted on the waters of Guantanamo Bay. "Attention" sounded and was reechoed from craft of every size: from the huge plane carriers to the little station tug. The "Star Spangled Banner," executed by the brass bands of a score of ships, blared forth. "Colors" ran up and hung limp from a hundred flagstaffs. "Carry on" sounded from the bugles. Men in white uniforms relaxed from rigid salutes and took up their sundry duties.

Then, slowly, each flag was lowered to half-staff, while a thousand questioning glances were exchanged by those who did not know. There I stood, dazed at the vision: the whole Navy of the United States in mourning because of a *pimple on the nose.*

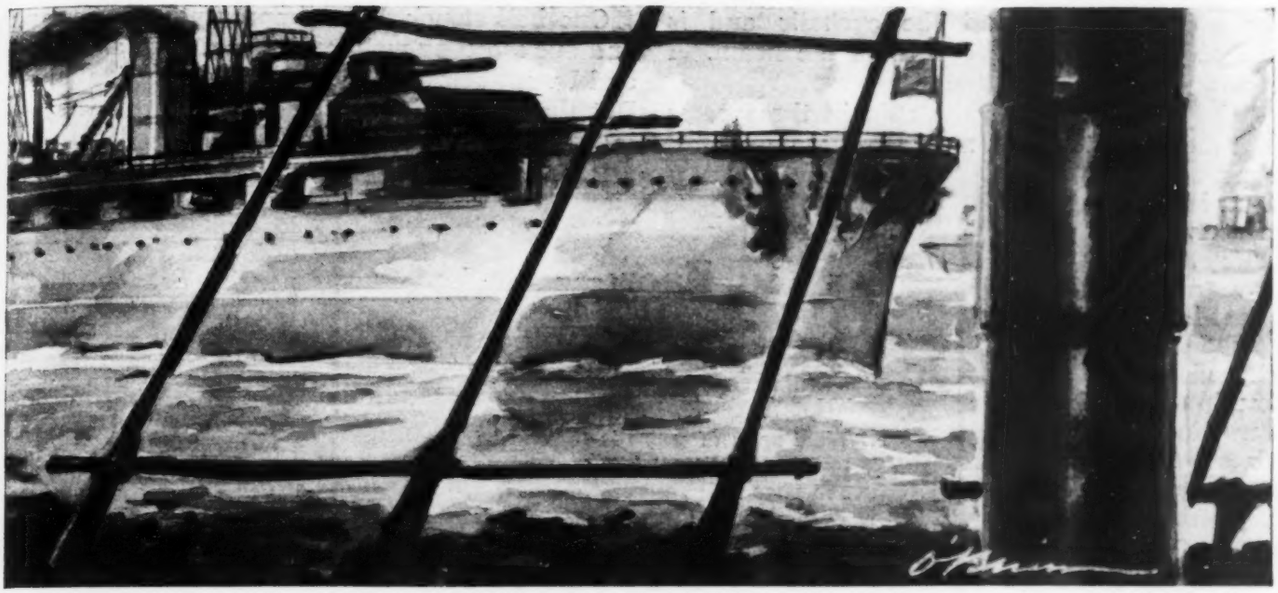
"Who's shoved off?" casually inquired the paymaster who, along with me and the other department heads, had come on deck to report his division to the executive officer.

"Captain Brown, the Old Man on the U. S. S. *Taft,*" I replied. "Died from a pimple on the nose."

"Gosh!" exclaimed Pay. "Whose fault was it, Surge?"

"Whose fault was it?" I repeated. And the more I thought about Pay's question and discussed it with him as we two paced mechanically fore and aft on the quarterdeck, the more guilty ones I found.

If mortal dared, the first one to criticize might be the one who designed the circulation of the blood in that area of the face extending from the upper lip to the forehead. The venous blood from



A LITTLE PIMPLE!"

By Robert Toubib

this area returns to the heart by two routes: the comparatively safe route by the branches of the facial veins that pass outward over the cheeks to converge into the main stem of the facial vein at the angle of the jaw, and the more dangerous route via the angular veins passing directly backward into the skull at the inner angle of each eye, thence to the naso-frontal veins and the superior ophthalmic veins to the cavernous sinus, which lies at the base of the brain.

In reply to Pay's eloquent gesture of despair I explained that all this meant that infections of that area covered by the little mask worn in a *bal masque* may quickly be carried back through the eye sockets to the base of the brain and cause death. That is why the French have dramatically named the disease, *furoncle du masque*.

Even when badly treated, a furuncle or an abscess of any other part of the body surface is rarely dangerous. Though the disease is often intensely painful, death from such a cause in reasonably healthy individuals is almost unknown. But a *furoncle du masque* becomes the death mask for one out of ten of its victims. This rate is as high as that of appendicitis which has been badly treated; that is, when purgatives have been given.

The next one guilty in fatal cases of furuncle of the mask is the patient himself. Almost invariably he has squeezed out an infected blackhead, pulled out hair from an irritated nostril or, as in the case of the captain of the battleship *Taft*, opened a pimple with a pin and forced out the pus.

The last of the guilty in a fatal case of this disease is the one who treats it. And as Pay and I continued our promenade of the quarter-deck, I told him how bad treatment helped the metamorphosis of a simple pimple into a deadly disease.

Irritation of a small infection often makes it worse. And though squeezing a pimple is instinct, almost one of the minor human passions, it is dangerous because bacteria are forced into the surrounding uninfected tissue. This tissue, being bruised by pressure, furnishes ideal soil for bacterial growth; or bacteria may be pushed directly into the blood stream with still more rapidly dangerous results.

The day after the patient's attempt to improve his looks he notices that the site of the infected blackhead or hair is definitely worse. He promptly picks off the top of the pimple and again presses out the pus. Often, before another twenty-four hours has elapsed, the pimple has become a throbbing boil.

"Just a boil," he says. He has had boils before and still does not take his condition seriously. He may simply ask some inexperienced person to open it with a safety razor blade; or, if he is proud of being a he-man, he will cut it himself.

BY THE next day when he does seek professional advice his face has become a hideous grotesque snout with pus dripping from the wound. But now, even the best treatment may be too late. In a short time the patient's eyes may begin to bulge out, which is the sinister indication that the infection has penetrated to

the soft tissues behind the eyeballs and is probably on its tragic course to the brain. I continued my description:

"Unfortunately, it is the rule in these cases that the patient remain mentally clear and alert almost to the last. Thus he watches with piteous anxiety . . ."

Pay broke in: "Hey, have a heart, Surge. I just had breakfast!"

The U.S.S. *Taft,* anchored close aboard, annihilated all conversation with her siren. As the screech trailed off to a lower key, the cadenced clank of her anchor chain could be heard as each link beat its way up out of the hawser pipe. When Pay could make himself heard he shouted: "What's that battlewagon doing?"

"She's going out to sea to bury the captain. First burial at sea I've heard of in the Navy for years. He asked for it . . . I saw him last night on the hospital ship. He was right to ask it . . ."

"Never mind, Surge, I'll take your word for it."

Pay and I completed a round trip of the deck before he broke the silence again: "Well, Surge, what's the answer?"

"First, the preventive treatment is obvious: Do not subject the mask to any irritation in the presence of the least visible infection. Do not squeeze, do not cut, do not pick."

"All right for the don'ts. What do you do?"

"Don't you do anything. Let the doctor do it. But, Pay," I concluded, "that's enough. For after all, I'm only pointing out the value of treatment and not trying to teach you the management of a case."

One bell struck. Our impromptu discussion and our morning walk ended abruptly, and Pay and I went below to take up our respective jobs. But the subject impressed me. Between helping theoretically to sink the "blue" fleet and my usual duties I found a few minutes to look up case records and work with pencil, eraser and typewriter on an article for the *Naval Medical Bulletin.*

In the meantime the death and burial of the captain of the U. S. S. *Taft* dropped into history with the rapidity of a solved murder. I was tapping out the manuscript inspired by my quarterdeck discussion with the paymaster when Pay, himself, stepped over the high doorsill into my office.

"Surge," he said and hesitated. I noticed a sheepish expression on his face. He continued: "I had a little pimple here at the root of the septum of my nose." As he spoke I noticed a little distortion of his upper lip. A smile must have escaped me for he said, "Please don't laugh, Surge. My lip hurts. I pulled off the scab and tried to get out the pus. Yes, I know, I'm a fool. But, Surge, I didn't squeeze it hard. . . . Anyhow, it throbbed all night, and here I am."

Pay looked so contrite that I did not tease him for his stupidity.

"Well, Pay," I said, "the dentist has the only x-ray machine on board, and it's against Navy regulations to use it for treatment. But the regulations were made for the Navy and not the Navy for the regulations. Come on, Pay, one fatality from a furuncle of the mask is enough for this cruise."

Do You Know—

1. Whether contact glasses are more popularly used by men or by women? *See page 717.*
2. What span of years is the most important in securing habits of good posture? *See page 720.*
3. How long ago the principles of air conditioning were put forth in a patent, and by whom? *See page 680.*
4. How much truth there is to the theory that the common cold has something to do with the functioning of the intestines? *See page 731.*
5. How often does hydrophobia develop in persons who have been bitten by a dog who has rabies? *See page 726.*
6. Precisely what does a heart murmur indicate? *See page 684.*
7. What are the ingredients of a good dentifrice? *See page 714.*
8. What are Negri bodies and in the clinical test for what disease are they extremely important? *See page 706.*
9. Who is responsible for the introduction of the spirit of scientific investigation into the study of anatomy? *See page 739.*
10. What are the lighting requirements for work in the kitchen? *See page 753.*
11. What is the first requisite of a good teacher? *See page 749.*
12. Of what is a "Health sundae" composed? *See page 688.*
13. Where is the best place for service in a doubles tennis game? *See page 736.*
14. How to tell from the appearance of a hen's egg whether it has been fertilized? *See page 745.*

Old Teaser Asks Questions About Life

. . . By PHILIP JARED . . .

I WAS JARRED when I learned that even doctors may have their personal difficulties getting around to instructing their own children properly in all things they really should know. I thought the matter would be easy for them and for nurses because they are generally supposed "to know everything." Knowing everything about a subject, as all people realize if they stop to think about it, is quite different from really "telling all." From a layman's point of view, something ought to be done about this, but the layman does not prefer to do it himself. The jar I am referring to has to do with the fact that usually (doctors can talk to other folks' children better than to their own.) That scratched my bump of curiosity because it did not make sense.

I do not want to have Dr. or Mrs. Answith misunderstood at all, for they handled this sort of instruction pretty well, if you care to ask me. It is the other doctors and their wives, and lay parents, who concern me. As for myself, I just got my early information willy-nilly, most of it bad, on the catch-as-catch-can plan. Really, the Answiths were practically ideal parents in this helter-skelter world.

My interest in this matter started when Old Teaser's superiority had to effervesce. He had a hard-headed ancestor somewhere in the family tree nearer than the cavemen; he was skeptical of all fairy tales. What he thirsted for was facts, something of practical value to a 9 year old savage who masqueraded in schoolboy's clothing. He had developed an annoying cliché: "Aw, I bet you believe in Santa Claus!" This was guaranteed to get under any one's skin the way he used it. He posed this stunner on little Claribelle one evening.

"No, I don't either," she insisted, and the battle was on.

"Stop it, you imps!" growled bookwormish Old Sock, looking up sternly. "What's the row?"

"Old Teaser says the stork won't bring me a baby dolly and there isn't any Santa Claus," explained little Claribelle heatedly.

"Well," asked Old Sock with all the superciliousness of a college freshman, "don't tell me you believe in Santa Claus!"

"'N' the stork don't bring no babies either," blurted Old Teaser.

"Eh!" Old Sock was aghast with the potentialities of the situation. He tried to crawl back into his book because it was beyond him. I overheard him mutter: "Gadzooks. . . . Pistils and stamens!" His sarcasm passed right over my benighted brain.

"'N' the doctor don't bring 'em either, Old Cry Baby," shouted Old Teaser for emphasis.

Old Sock's book jerked from the mental impact of another tumbling fairy story. He was afraid one of them would try to prove something by him, but he was too lazy or too stubborn to get himself out of the room before the questions came.

"The stork does, and so does the doctor, sometimes," Little Claribelle insisted out of loyalty to her father. "I know 'cause Ann Smith says the stork brought her little brother one night, and Susan Altheide's baby sister was brought by Dr. Mack, so there!"

"Aw, anybody 'at believes in old Santa Claus believes in the stork!" was Old Teaser's withering comment.

"I don't believe in Santa Claus any more either," insisted Claribelle almost in tears with the struggle not to denounce her childhood saint.

"But you don't have no more sense 'n to think an old bird carries naked babies round on cold nights. Why don't they freeze to death? Answer me that. You can't, can you? They don't, that's what. I'll leave it to Old Sock."

"Cut the row!" growled Old Sock, hoping to forestall things. "Both of you should have been in bed a long time ago," he hinted broadly.

"Naw," said Old Teaser insolently, "it's not nearly time yet."

"Then keep your zoo out of the living room," Old Sock compromised grouchily.

"Huh, I know a feller 'at thinks he's gonna be a doctor. He belongs in a zoo right now," was Old Teaser's subtle dig at his brother.

"Have it your own way," mumbled Old Sock from behind his book. "It really is like a zoo here, little anthropoid." That was his safe way of calling his younger brother an ape.

There is nothing like a flank attack to stop one fight and start another, and Old Sock was for the time successful. The iconoclastic Quiller (Old Teaser) was always ready to fight Junior or Judith, in preference to Claribelle, his younger sister. He believed, "The bigger they are, the harder they fall," and he always felt more important battling bigger potatoes than teasing small ones.

"WELL . . . I GOT A CHICKEN SEED!" OLD TEASER TOLD CLARIBELLE, WHO STILL BELIEVED HE WAS FOOLING HER.

"What's an anthropoid?" demanded Old Teaser curiously. He always wanted to know what new words meant.

"A manlike animal," answered Old Sock evasively.

"Huh!" snorted Old Teaser. "Monkey, hey? Aw! . . . I guess you think the stork brings little monkeys and drops 'em in trees, you old freshie!" He arose and circled warily around Old Sock's feet, ready to avenge his insult. "I wish the ol' stork would come and take you and drop you in the river." He was almost aroused to the point of springing.

"Stork!" suddenly exploded Old Sock, assuming a defensive attitude. Old Teaser jumped back like a cat with a firecracker exploding in its face. "Go away and lose yourself!"

OUTWITTED and with the opportunity for surprise attacks gone, Old Teaser did depart, grumbling about the opinions Old Sock held regarding his own importance. Then Little Claribelle came to Old Sock affectionately. He patted none too gently on her little back and would have resumed his book.

"He's wrong about the stork, isn't he, Junior?" she asked.

"Uh, you better go talk to Mama about this stork business, Claribelle."

"You tell me," she wheedled. "I like you."

"No! . . . Aw, Claribelle, Quiller's right about the stork and the doctor not bringing babies, but . . . Now, see here, you ask such questions of Mama or Papa, can't you? They know how to explain better."

"No!"

"Now!" He shook an admonishing finger at her. "Any good nurse knows how to obey orders, Claribelle."

"All right," answered the future nurse, and she went upstairs to find Mrs. Answith.

"Whew!" breathed Old Sock to himself before he again buried his nose in his book. "Jumping Juno!"

But he could not concentrate on his book. After squirming around for a more comfortable

position, sitting on his shoulders with his feet on the back of a chair, he gave up. He went purposefully into Dr. Answith's library. I knew that demeanor meant he was pestered with unsatisfied questions in his mind.

What satisfaction Little Claribelle might have gained from Mrs. Answith I cannot say. Unfortunately she was absent from home just then. The subject of the mysterious stork was forgotten for a week or ten days, and then Old Teaser again had occasion to deride Claribelle's worldly understanding about old Santa and the professional stork. Dr. Answith had been reading his newspaper with unexampled concentration, considering the noise, but he looked up surprised. Some subconscious warning it was, I suppose.

"What's that you just said?" he demanded rather sharply.

OLD TEASER scornfully went into the details of Claribelle's superstition.

"When did you stop believing in the stork?" Doctor Answith glanced at Mrs. Answith as he put his question.

"Aw, I never believed in no ol' stork," insisted Old Teaser blusteringly.

"What did you believe in then, Quiller?"

"He used to believe in the doctor," piped up Little Claribelle vengefully. She was ready to play wise herself now.

"Indeed!" Dr. Answith removed his glasses and began polishing them. That meant he was thinking hard about something he was going to say. "Ah, Claribelle," he asked as he replaced his glasses, "do you suppose Quiller knows why a plant sprouts out of a seed when it's planted in the ground?"

"Because there's water and chemicals in the ground," almost shouted Old Teaser before Claribelle could answer.

"Well, that is partly right," agreed the doctor soberly. The ground has to be warm enough to suit that particular seed, doesn't it?"

"Sure!"

"You didn't know that the seed is very much like a bird's egg, did you?"

"Huh?" grunted Old Teaser incredulously. "A seed's all hard inside, and an egg isn't. They don't look alike."

"A coconut's a seed, and it isn't all hard inside," volunteered Claribelle importantly.

"Aw, go chase yourself!" Old Teaser was irritated. "Go hatch a coconut tree out for me."

"How many different seeds are there about the house right now?" asked the doctor.

"None, I guess," said Old Teaser after a moment of thought.

"Are there any beans or peas, Mother?"

"Yes," answered Mrs. Answith. "There are lentils, several kinds of nuts, some peach and cherry pits and, I believe, part of an ear of corn Quiller left in the basement."

"Quiller, will you and Claribelle get one or two specimens of all the seeds you can find in the house just now?"

There was quite a bit of scampering about in the seed search and several screams of protest from little Claribelle whenever Old Teaser acted as if he intended to take some of her specimens away from her. They collected all the different seeds already named, and old Teaser came back finally with his hand behind his back and an impish grin on his countenance.

"Guess what kind of seed I have, and you can have it," he announced.

"Grass seed," guessed Old Sock.

"Tomato seed," said Dr. Answith, remembering there had been tomatoes for dinner.

"A marble." Claribelle suspected one of his jokes.

"I heard you open the refrigerator and close it. I think you had better not ask me," his mother declined.

"Well . . . I got a chicken seed!"

"Aw-w-w!" Claribelle still believed Old Teaser was trying to joke. She was disgusted with him.

"No, Claribelle," said Dr. Answith kindly, "he is right if you look at it the right way." She looked at the egg as if taking his words literally. "We will show you after a while just how an egg is like a plant seed." He gathered all the specimens together and took them to a table. Then he began to work on the seeds with his pen knife.

"See, here," he explained, "is a little round sproutlike thing. It's the seed germ. It's the live part of the seed that grows. The rest of the seed is food material for the growing germ, or the protective shell. They also call this thing the plant embryo. See, every single one of these seeds has such an embryo in it somewhere."

"Is one of those things in all my dollies?" asked Claribelle hopefully.

"Huh!" snorted Old Teaser. "Dolls don't grow. They're made."

"Well, doesn't nature make the seeds too?" insisted Claribelle.

"But people make the ol' dolls," Old Teaser countered grumpily. "Daddy, what makes the em— that germ thing grow?"

"The embryo?"

"Yes."

"Because the little tiny germ cell in it has certain parts from the mother and the father brought together in it."

LITTLE CLARIBELLE was no longer interested, and she left to play with her dolls. Old Teaser remained to argue.

"Never heard," he objected, "of an ol' mother plant or a father plant. Where are they?"

"In most plant blossoms, there are both mother and father parts right there. The mother part of the blossom, or flower, makes

the egg cell, and the father part makes pollen, that brownish dust you have noticed about flowers. When the pollen and the little egg cell of the plant come together, a seed that will grow develops. . . . Some plants are different this way, and only one of these is made in each plant. Either they are male or they are female, like the animals, you know."

"I never saw no mother plants; I never saw no father plants," denied Old Teaser. "How'd I know which is which?"

"Well, you would have to know which is which to know them. . . . I think there are some male and female cedar trees out in the yard. Let's go see."

THEY were gone about five minutes and returned with several cedar twigs. Dr. Answith spent several minutes showing Old Teaser the difference between the differently sexed twigs. The boy was taking an unusual interest in the matter. Dr. Answith became suspicious.

"Why does this interest you so much, Quiller?"

"Oh, ol' Sissy Simpkins thinks he knows so much about plants and flowers. I'm gonna take him down a peg or two some day."

"I see. This should do it. . . . Now, if you will clean up this mess we've made . . ."

"But what about this egg? Ain't you gonna show me how it's like a plant seed?"

"I might if you quit saying 'ain't.'"

"Aren't you?"

"All right, but we had better go to the kitchen. Mama may object if we spill the egg."

Little Claribelle left her playthings to go along. Obviously she was more curious about what they were expecting to do than about what Old Teaser and she might learn. She watched until she saw they were merely breaking the shell of a hen's egg and then went back to her more important personal affairs.

Dr. Answith pointed out the similarity of the shell of the egg to the hull or husks of the seeds they had already examined. The food material for the growing embryo, he said, was solid in the seeds instead of liquid as in the egg.

"How come?" asked Old Teaser, who always wanted to know why.

"Think, Quiller, the seeds need water, but the soil furnishes it."

"Couldn't the hen lay the eggs in water? Fishes and frogs do!"

"No, we aren't on the right track. . . . Animals need more water and more food quicker than plants do. They have to keep themselves warmer than plants. They have to have more chemicals—food—to burn in their bodies to do this. Warm blooded animals need more oxygen from the air, so they don't lay their eggs in water where there is less oxygen as cold blooded frogs and fishes do. The thing I'm trying to explain is this: For every kind of plant or animal, nature provided the sort of food for growing and life which every embryo likes best. Whatever plan nature uses, it always fits in with the habits and ways the animal has in living."

"How does a chicken before it's hatched know it likes egg white and egg yolk?" puzzled Old Teaser.

Dr. Answith smiled a little. He said: "The chick embryo takes what it gets before it has grown enough to know what it likes. No embryo lives in a short-order restaurant, Quiller. It doesn't even eat in the same way you do. It absorbs its food directly from its private food store. How could it digest food before it has a stomach or gizzard?"

"It couldn't," agreed Old Teaser. "Plants don't have 'em, do they?"

"No, but all their lives they continue to absorb their food through their roots and leaves. You absorb oxygen through your lungs, and your stomach and intestines absorb water and food for you. You are not a fish, and you need more oxygen than can be dissolved in water. So nature made you billions and billions of little red blood cells with a special chemical in them to carry your oxygen from your lungs to all parts of your body."

"Is that what makes the blood red?" asked Old Teaser curiously, going further away from the subject of embryology.

"Well, they carry the used oxygen back to the lungs again and dump it there. . . . Is there anything else you want to know about—er, stork eggs?"

"Yes . . . wouldn't it be a lot handier if animals laid eggs like birds?"

"Ha, ha! Perhaps so, Quiller, but wouldn't a colt or a calf have to have a whale of a big egg? Wouldn't it be quite a job for the cow or mare to keep it warm until it hatched out? Maybe nature knew what she was doing when things were changed for animals that run around on the ground. There is one animal, the duck bill, which lays eggs. It's sort of old-fashioned, as animals go. Evidently nature didn't think so well of that way for animals who feed their babies milk to have their young. . . . Let's look at this egg a bit better."

THEN Dr. Answith explained how the major portion of the white of the egg was water and albumin, which is of the same general type of chemical that goes to make muscle in the body. The yolk had fats and other substances very necessary for the development of the chick's body. He kept turning the yolk over until he came to a little round spot on the surface. He explained how this spot would be much less apparent if the egg were unfertile and no chick would hatch if the egg were incubated. Then he had to explain fertile and unfertile eggs to the curious boy, and how incubating the eggs at the right temperature *(Continued on page 768)*

SCHOOL AND HEALTH

A Department Conducted by J. MACE ANDRESS, Ph.D.

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Who Should Teach Youth?

THE TWELFTH OF A SERIES OF EDITORIALS ON UNDERSTANDING THE ADOLESCENT

IN CONSIDERING the progress of education in America we are inclined to think immediately of its great leaders such as John Dewey, G. Stanley Hall, Charles Eliot and Horace Mann. Certainly these men deserve all honor and praise. When we think of the wonderful buildings in which our high school students are housed we have a feeling of satisfaction. The critical study of curriculums has resulted in the clarifying of aims and improvements in teaching. All these influences have played a significant part in the education of the adolescent, yet it is no exaggeration to assert that the greatest positive influence in the education of youth has been and always will be the classroom teacher, who remains unknown to fame.

Henry Van Dyke has eulogized the unknown teacher in unforgetable words, which are worth quoting: "I sing the praise of the unknown teacher. Great generals win campaigns, but it is the unknown soldier who wins the war. Famous educators plan new systems of pedagogy, but it is the unknown teacher who delivers and guides the young. For him no trumpets blare, no chariots wait, no golden decorations are decreed. He keeps the watch along the borders of darkness and makes the attack on the trenches of ignorance and folly. Patient in his daily duty, he strives to conquer the evil powers which are the enemies of youth. He awakens sleeping spirits. He quickens the indolent, encourages the eager, and steadies the unstable. He communicates his own joy in learning and shares with boys and girls the best treasures of his mind. He lights many candles which, in later years, will shine back to cheer him. This is his reward. Knowledge may be gained from books; but the love of knowledge is transmitted only by personal contact. No one has deserved better of the Republic than the unknown teacher."

The teacher is the most important factor of the school environment. The poor teacher can counteract the advantages of the finest buildings, best textbooks and most modern courses of study. The good teacher can accomplish more with such aids, but even with serious environmental handicaps she can still accomplish the unusual. Many philosophers of education today recall the picture of an ideal school: a log with an inquiring pupil at one end and Mark Hopkins, a celebrated teacher, at the other. The world's greatest teachers such as Jesus and Buddha craved none of the modern equipment of schools today but only an opportunity to meet face to face those who wished to learn. Students of the middle ages followed Abélard from place to place to get the wisdom that fell from his lips.

THE first requisite of a good teacher is a wholesome personality. The word "personality" is defined in almost as many ways as there are people who attempt to use the expression, but, cutting through the mass of verbiage that surrounds it down to its essentials, perhaps most psychologists would agree that its chief characteristic is personal influence. Though this power may be used for noble or base ends, it is still personality. Ordinary observation and the reading of history show that personality is contagious. Witness the racketeer who builds up a powerful criminal organization. Think of the distinguished geologist Nathaniel Southgate Shaler whose classrooms were always crowded with eager students who continued throughout life to recall with pleasure his instruction, read geology and observe changes in the physical world.

Teachers with offensive personalities should not teach youth. Such teachers may be harsh and unsympathetic with youth, impatient, quick tempered, helpless in a disciplinary situation, dependent on "wisecracks" and reproaches, overcritical, sarcastic and crabbed in disposition. Such teachers may inspire dread and fear and a dislike of the facts taught. This is too common in our schools. It inspired Mr. Dooley to say, "It doesn't matter what you teach a boy, Hennessy, so long as he doesn't like it."

Teachers with wholesome personalities are likely to win the confidence of their pupils, become their friends and help them to solve some of their personal problems of adjustment. Although personality may be dependent to a considerable extent on heredity, fortunately a wholesome personality may be cultivated.

Health within reasonable limits is under the control of the teacher. It is possible to keep in good physical condition through health examinations and good health habits. Health is contagious. The healthy teacher makes health attractive. It stands for personal attractiveness, a surplus of energy and an enthusiasm in carrying on teaching. The origin of the word "enthusiasm" is interesting. It comes from two Greek words *en* and *theos* meaning a "god within." It is hard to believe that a teacher who is physically ill has a god within. It is more probable that such a teacher will act as though possessed of the devil.

EVERY teacher may do something in cultivating emotional balance by learning to solve his personal problems in a better way. "Keeping a Sound Mind" by John J. B. Morgan would be an excellent book to read. Worthwhile interests and

hobbies help to maintain an emotional balance.

One's personality may be improved by paying attention to one's personal appearance. Cleanliness, neatness and good taste in dress influence youth. A sense of humor, fairness, love of the beautiful, serenity and reverence, all capable of cultivation, make an impression on boys and girls.

Within recent years, schools have put more and more emphasis on training for character and citizenship. The scientific studies made of such training show that it is not what children learn from a book that counts most. It is the personality of the teacher.

Teachers who wish to know what high school students think about their teachers will read with interest "Teachers and Teaching" by Frank W. Hart. The material for this book was collected from 10,000 high school seniors. Again one finds that the personality of the teacher counts.

In conclusion we quote with appreciation from an article by Prof. Evelyn M. Carrington: "The teachers who live healthy, gracious, and fine lives, who laugh often and love much, who appreciate beauty, and who deserve the respect of men and the love of children are truly moulders of destiny because they are important factors in the lives of school children."

OUR HEALTH-CENTERED PROGRAM

MAY E. HUFF
Principal, Harlingen School
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SOMERSET COUNTY, N. J.

Health is not a subject to be taught but a way of living. A school principal indicates how this manner of life is the basis of a school's activity.

IN THE field of education is there anything that is more vital and important than a sound program of health education? If a parent's aim for his child is success, fame, wealth or happiness, how important are these if the health education is neglected? Yes, we must admit that health is by far the most important. Without it these goals cannot be attained; but with it a child can go as far as his ability and opportunity will permit.

We began to realize this in making out our school program; and when one becomes "health conscious" there is no end to the many things that are necessary in order to promote better health. We started on this program because of a natural situation in our school. During the summer vacation the building had been thoroughly cleaned, painted and re-

decorated. When the children returned to school this proved to be a great incentive to begin a cleanliness program. Children kept their rooms cleaner and the halls, basement and playground free from papers. This led to personal hygiene. We noticed cleaner bodies, clothing, hair and finger-nails and a neater appearance in every way. Since practically every one carried his lunch we began organized handwashing before eating. The discussion of cleanliness in the care of foods followed.

Our discussion went further than just the care of foods. We all realized the great importance of proper foods and a well balanced diet. We made a study of the proper foods for growth, energy and building of body tissues. Then the children listed their daily menus for a month to see how they compared with the essentials in the daily diet of every growing school child. Some were quite well balanced; others were very poor. Children became conscious of the foods they should have, and many instances were given in which a change had been made. Many pupils had been drinking coffee. Nearly all of them have now stopped entirely. Cereal was added to the breakfast of some, vegetables and fruits to the meals of others, and so on. In many cases, parents followed these suggestions and helped provide the proper diet. One mother remarked, "This health program is so worth while. We are learning much through the children."

Besides having the proper kinds of foods, it is necessary to have the proper amount of rest. About the only time that the teacher can have supervision over this is after the school lunch and at other times during the school day when it seems necessary. By doing this the children become conscious of the necessity for rest, and it is to be hoped that the lesson will carry over at home. We discussed the proper amount of sleep. The pupils checked themselves, and many parents cooperated by seeing that the children did get the necessary amount of sleep. Of course there are always some exceptions, and we know some children are not getting sufficient sleep and rest. However, by home visits and conferences with parents this situation has been improved in many cases.

Exercise and fresh air are also vital in this program. A supervised play period in the middle of the morning, a shorter period in the afternoon and the child's activities after school take care of this rather well. These periods provide fresh air and sunshine as well as exercise. Fresh air in the classroom is taken care of by a pupil in charge of ventilation. At home, again, we must depend on the pupil and the parents.

As we continued with our health program we continually found it necessary to make changes until we finally centered our whole program around health. In making out this program, health was our first consideration. We put the academic subjects in the morning because they require more thought and keener minds. The afternoon consists more in activity work of some kind.

The noon intermission as carried out now is thought to be one of our greatest accomplishments. The children first arrange their desks to form tables in order to have a social situation. They put their lunch boxes on the tables and then go to the basement and wash their hands. When they return they place all their food on napkins on their tables. Then Grace is said, and they are ready to eat. We try to promote friendly conversation in subdued tones. At a certain time the basket is passed for waste materials, and the pupils put their lunchboxes away and rearrange their desks for the afternoon session. Then they have a rest period of fifteen minutes. They have learned that after eating, complete relaxation, both physical and mental, is necessary. They do this by putting their heads down on their desks. Though this is not an ideal situation, it is far better than strenuous exercise and hard play.

While this program does not completely instil in the children the habits we wish to form, yet it is bound to be far-reaching in its results. Many children are forming better habits. Organized handwashing makes them want clean hands. After playing games outdoors, they really are uncomfortable with dirty hands and want

to wash them. Their desire for clean, neat appearance is noticeable. The school lunches are better balanced; and with a longer lunch period, many bring more lunch and something to drink. They take the proper amount of time to eat and do not hurry. The rest period is being enjoyed more. The nervous, high-strung pupils are beginning to quiet down and really relax. The children are enjoying their lunch at school much better than they did before. One girl lives just across the street, and she always went home to lunch. But now our "dining room" looks so attractive to her that she frequently brings her lunch and enjoys the social hour with us. The children are learning table etiquette and acquiring good eating habits as well as ability in choosing proper foods. This program provides exercise at the correct time with sufficient sunshine and fresh air. As they become better nourished and healthier the children are better able to resist disease. With the knowledge they have about communicable disease they take better care of themselves. It makes the school a safer and pleasanter place for them in every way.

This health program for the building seems to me to be one of the most satisfactory of any of the school projects we have ever attempted. There is a good spirit of sportsmanship and a happy attitude toward every one. After a little while when the new habits become more firmly fixed, our school is going to be a most pleasant place in which to spend our time.

SAFETY ON THE HIGHWAY

BELLE L. DICKSON
Supervisor of Intermediate Grades
Humboldt State Teachers College
ARCATA, CALIF.

The lesson plan that follows was used in a sixth grade. It illustrates admirably where materials on safety may be found and how they may be used in teaching. Notice the application to local conditions.

Aims

To show the need for obeying traffic regulations.

To develop a "safety conscience."

To create a sense of personal responsibility.

Materials

Accident statistics from the National Safety Council, 1 Park Ave., New York:

96,000 dead from accidents
27,000 traffic
25,000 industry
24,000 home (burns, falls, etc.)
20,000 public accidents, (gunshot, drowning, etc.)

Editorial from San Francisco *Chronicle*, showing annual cost—$850,000,000.

Procedure

After reading carefully the figures on the board, list two reasons for safety instruction: loss of life; enormous expense.

According to the last census, the population of Eureka, Calif., is 20,000. From these figures it is evident that each year in our own country there are as many people killed in traffic accidents as there are living in Eureka, Arcata and one or two other towns.

What questions does this raise: How many of these accidents were preventable? (Possibly 5 per cent were unavoidable.) Why aren't people careful?

When the National Conference on Street and Highway Safety met in Washington, D. C., what problem do you think they were trying to solve? (How can these accidents be prevented?)

What auto accidents do you know about?

In reviewing the causes of a group of 100,000 accidents, the committee found that about 95 per cent were due to violations of six traffic regulations. They were as follows:

Violation of right of way.
Exceeding speed limit.
Driving on wrong side of road.
Driving off roadway.
Failure to signal.
Cutting in.

We will have to agree that any person with sufficient intelligence to drive a car can learn six simple rules. But *knowing* the right thing is not enough. How shall we deal with those who for one reason or another fail to observe the traffic rules?

Do not issue a driver's license until the applicant has passed a test on regulations.

Take away licenses, and fine any one who fails to obey traffic rules.

Teach "safety" in schools so pedestrians will see the need for following signals.

The newspaper should publish statistics quite often so the need for safety will be kept before people.

Follow-Up Work

It might be helpful to the teachers in the lower grades if this group could in some way illustrate the six rules which drivers need to know and follow.

You might be able to make some interesting cartoons or safety posters.

What can you do to help make the highways safe? Of course, this question will be answered in the compositions you write for the safety contest. But I wish for the next few days you would think of all the different ways in which you can cooperate with the state automobile association in helping to make the highways safer.

Activities

Reading and interpreting traffic statistics.

Trying to visualize 27,000 people.

Discussing accidents seen or heard of.

Listing ways to reduce the number of accidents on the highway.

Listing results of failure to observe traffic laws. (Often others besides the drivers, such as pedestrians crossing in obedience to lights or signals, are killed or injured.)

Planning ways to cooperate with the state automobile association in its attempt to make highways safe. Writing compositions on "What I Can Do to Help Make the Redwood Highway Safe."

Planning and giving an assembly program on safety.

SOURCES FOR MATERIALS ON SAFETY

FLORENCE NELSON
Editor, Safety Education Magazine
NEW YORK CITY

Every progressive school today prides itself on its program of safety education. What problems should be considered? Where is material to be found? In the twelfth and last of this series of notable articles on safety, Miss Nelson suggests answers to these important questions.

"WHERE shall I find materials for teaching safety? Isn't the subject rather thin and negative?" One often hears these questions asked by teachers who for the first

time are thinking about programs of safety instruction. Once the field has been explored, however, they invariably express surprise and pleasure at the wealth of subject matter available and its possibilities for bringing life and new interest to old subjects.

It is true that there is still an insufficient supply of organized material which has been developed according to approved educational methods and procedures. Within the past year or two great quantities of safety "literature" have been flooding the country. Some of it is good; much of it is superficial, negative, inaccurate and of doubtful educational value. Unfortunately the poor material has been accepted and used by many schools.

The wise teacher will be discriminating in her choice of aids to safety instruction and will select only those which bear the stamp of recognized authority in this field. Various sources have been suggested in this series of articles. In preparation for another year's work it may be well to review them and to add others which are likely to prove helpful.

Facts About Local Accidents

Safety teaching, if it is to be effective, must be based on the facts relating to child accidents in the school community. Certain hazards are common to many communities; others are created by local conditions, and often they are in greatest need of emphasis. Certainly they form the best approach, since they are within the child's experience and can be understood and appreciated by him.

Some of the facts which will be helpful in appraising educational needs are:

1. How many children were killed in accidents in your city or town last year?
2. How many received permanent injuries?
3. How many were temporarily disabled?
4. Is the number of child accidents increasing or decreasing? (Make a comparison for a ten year period.)
5. How does your city's record compare with the national record?
6. What are the outstanding types of child accidents in your community? What are the causes?
7. How many are due to lack of physical safeguards for children? How many appear to be due to lack of safety training?

Local information on child accidents may be obtained from the police and health departments, hospitals, state registrar of motor vehicles, local safety councils and motor clubs. The Standard Student Accident Reporting System, which takes into account every accident resulting in absence from school, is one of the best means of discovering the types which are happening most frequently.

It is suggested that a bulletin summarizing the local accident situation be prepared at the beginning of the school year and sent to every classroom for the use of all teachers and for pupils in the upper grades. If home accidents are of outstanding importance, and it is likely they are as the national reports show that a third of student accidents happen at home, the bulletin should be sent also to parents.

Using the Resources of the Public Library

Much material which will lend color, interest and variety to the safety program is available in public libraries, particularly in the school departments. In a recent article, Mrs. Margaret C. Palmer, assistant in the school department of the Newark, N. J., public library, tells about the requests which one of the librarians is filling on a particular Saturday morning:

"Requests for safety posters and one for safety songs for the first grade are sent to the Art and Music Department to be filled. Another teacher has written for a pamphlet published by the White House Conference on Safety. *Safety Teaching in the Modern School* is the title of another pamphlet in great demand. These requisitions send the librarian scurrying to the pamphlet collection. . . .

"The next problem is to find several projects on safety worked out for the third grade. For the convenience of library helpers and teachers a card index has been made, called the Project File. Here there are listed projects, units, stories, plays and poems on every subject that the most imaginative class or teacher could think of from Afghanistan to Zoo. The projects have been found in books, pamphlets and magazines and listed in this form. The teachers in the city have already become well acquainted with this file; consequently it is in constant use after school closes in the afternoon and throughout the evening. . . .

"About this time the usual Saturday crowd of teachers and school children arrive. Among the first is a rather breathless young lady. She rushes up to the desk and asks if the library has anything on safety education she may borrow. She explains that her principal has asked her to put on a safety program in assembly. Can the librarian give her some suggestions?

"The latter turns to the vertical file and takes out several folders marked 'Safety Education.' She ex-

(Continued on page 766)

School and Health Department for 1937-1938

IN THE next number of HYGEIA the School and Health Department will start its new program for the coming school year. The editor will contribute a series of twelve articles on "Building the Health Curriculum in the High School." In the department of New Books on Health he will also contribute, as heretofore, reviews of books and materials of special interest to teachers. There will be the usual special articles on health teaching.

Mrs. Ethel Martin of Chicago, a nutritionist with broad experience in dealing with health education problems, will begin a series of a dozen articles on nutrition. Dr. Allen G. Ireland, director of health, safety and physical education of the state of New Jersey, will start a series of three articles on "The Cooperation of the School Physician and the Classroom Teacher."

QUESTIONS AND ANSWERS

Artificial Respiration: Schafer Prone Pressure Method

To the Editor:—I have always taught my people in life saving that there is little, if any, water in the lungs in cases of drowning. In a HYGEIA article on "Artificial Respiration: Schafer Prone Pressure Method," Questions and Answers, March 1937, the statement was made that "most of the water in the lungs will run out" and then again, "If one arm is placed under the head, the chest volume is decreased and the outflow of water from the lungs is impeded." This leaves the impression that a great deal of water was in the lungs. I thought the water came from the throat and stomach and not from the lungs. Doesn't the epiglottis close tightly (because of pressure of water and contraction of muscles) unless the person is dead or unconscious before going under the water?

E. R. Oregon.

Answer.—The amount of water in the lungs of a person submerged in water depends on how far down he has sunk and how long he has been in the water, or in other words, for how long a time respiratory movements went on under water, with the gradual development of unconsciousness and opening of the glottis, all of which leads to intake of some water into the lungs. There will be, in addition, a great deal of froth in the respiratory passages.

The amount of water in the lungs of a dead person found in the water has been for a long time a medical-legal test on the question of whether the person was dead before he was put in the water or whether he actually drowned, since it was found that if the dead person had not executed any respiratory movements in the water much less water entered the lungs than if he had entered the water alive and continued breathing movements under water. So far as is known, this is still the medical-legal test; but in the case of a person brought up from the water alive, obviously the amount of water found in the lungs in addition to the froth depends on how long he has been under water and how deep he has been in the water; that is, how long he carried on respiratory movements under water before the state of unconsciousness and complete stoppage of respiration. The pressure of the water against the epiglottis will not prevent all water from entering the lungs if respiratory movements go on. Spastic closure of the glottis will help to do so, but this closure relaxes with increasing unconsciousness.

Lighting Requirements

To the Editor:—Are the electric companies correct in their statements about the size of the bulbs required for visual activity; namely, about 120 watts for reading lamps and 100 watts for kitchen ceiling lights?

A. B., Virginia.

Answer.—There is still no absolute way to measure lighting requirements for various visual tasks. It is true that most persons are inclined to read and work with insufficient illumination. For a table or bridge lamp, 60 or 75 watts is sufficient. For ordinary reading for a floor lamp, 150 watts would be a fair average. For kitchen ceiling lights, from 100 to 150 watts would be satisfactory.

One must not overlook the fact that the total quantity of light supplied, if more than needed, can produce just as much discomfort as if there were not enough light. The distance from the source of light, the glare and the type of surface from which the light is reflected, all act as variable factors. Recent campaigns for more light have accomplished much good, but when the day arrives when the quality of light as well as the quantity can be controlled it will be possible to make specific recommendations for individual homes and offices.

If you have a question relating to health, write to "Questions and Answers," HYGEIA, enclosing a three-cent stamp. Questions are submitted to recognized authorities in the several branches of medicine. Diagnoses in individual cases are not attempted nor is treatment prescribed. Anonymous letters are ignored.

Removal of Superfluous Hair by X-Ray Treatment

To the Editor:—Will you advise me about the roentgen ray process for removing superfluous hair permanently? I am copying a paragraph from a booklet received from a laboratory:

"The process consists of the extraction of the hair with an olibanium substance which is applied at blood heat. As it cools it causes the pores to open wide, at the same time forming a gripping masque, which when removed brings the hair with it clear from the root, leaving the skin perfectly free of the blemishing hair. While the pores are still open the Roentgen Ray is then applied which devitalizes the papillae, causing them to cease secreting hair cells. The same condition is artificially produced that is brought about by nature in the case of bald heads. Once this condition is completed the hair never grows again."

D. C., Maryland.

Answer.—The roentgen ray and the x-ray are identical. Professor Roentgen, who discovered this ray in his research work in physics, named it the x-ray because its properties were unknown and because the letter "x" is customarily used in mathematics and physics to indicate the unknown quantity. Specialists in x-ray work later designated the x-ray as the roentgen ray in honor of its discoverer.

The roentgen ray will permanently stop hair growth if used in sufficient dosage, but the amount of the ray necessary to destroy hair likewise produces permanently disfiguring senile changes in the other skin tissues. For this reason informed physicians, particularly dermatologists, are united in their condemnation of the use of the x-rays or roentgen rays to remove superfluous hair. It is unnecessary to remove the hair first with "an olibanium substance" or by any other means or to "open the pores" before destroying the hair with the x-rays, for the same dosage of x-rays is required following such a procedure as otherwise.

Colostomy

To the Editor:—Some few months ago I was operated on for colostomy, which of course necessitates the wearing of a belt with a pouch. The odor of bowels' action is extremely offensive and is embarrassing in company. Could you tell me of some effective deodorant, in a liquid form or otherwise, that I could put in the pouch to neutralize the odor? I have been told to use charcoal, but I found the results ineffective.

S. D., Louisiana.

Answer.—The entire problem of living in comfort with a colostomy can be boiled down to a number of simple rules, which, if carried out faithfully, should make life much happier for the patient.

First, the diet should be so adjusted that there is a daily or twice daily solid evacuation. This diet should also reduce the putrefaction and fermentation in the colon to a minimum. These factors are important in controlling the odor.

In the beginning the diet should be bland with a low residue. The fluids should be restricted to about five glasses of all fluids daily, to be taken at meals only. No food or liquids should be taken between meals. Omit fruits and vegetables, except for a small amount of orange juice, with one serving daily of cooked fruit and finely shredded lettuce. Boiled milk is valuable. The foods which are concentrated in food value, high in vitamin value and low in residue should be used freely.

When the stool becomes normal the diet should be increased gradually. At first fruits and vegetables can be cooked; later add raw fruits and vegetables as tolerated. If the patient becomes constipated, fruits and vegetables are to be used more freely. Anything which distends the abdomen, such as carbonated waters, should be avoided. The patient will be much more comfortable with a nearly constipated stool which can be corrected at times with the injection of a small amount of olive oil into the colostomy. Drugs or mineral oil taken by mouth to control constipation have a tendency to upset the routine and must be avoided.

The next most important factor in controlling the odor from a colostomy is rigid cleanliness. The colostomy apparatus should be cleansed twice daily. The simplest way to do this is to connect a rubber hose to the wash bowl and, while standing over the lavatory, insert one end of the tube into the colostomy apparatus and flush the apparatus thoroughly, using approximately a gallon or more of plain water. It is an advantage to possess two colostomy sets so that one may dry while the other is in use. The patient might wear a pair of rubber gloves, such as are obtainable in any drug store, while carrying out this procedure.

A pad of cleaning tissues fastened to the colostomy apparatus by rubber bands will aid in preventing leakage.

No device is entirely satisfactory for the control of gas or liquid feces; therefore it is important that the stool be kept solid and a definite time be set aside each day for the evacuation of the bowel and the cleansing of the apparatus. A snug, well fitting colostomy belt is important.

Operations on Joints

To the Editor:—For about twelve years my legs have been drawn into a sitting position as a result of rheumatism. The hip joints are the only parts affected; that is, the action in the hips has been lost. Recently a physician told me that since the pain has left the legs and since the general health has improved a great deal, it is possible, providing the joints are not set, or ankylosed, that an operation to lengthen the cords will restore the lost action. Before submitting to such an operation, I should like to learn what sort of results are generally obtained through such an operation. As it now is, I feel that there is some chance of my regaining the lost action through a gradual building up of my general health and through exercising the joints and cords. There appears to be some action now that can be forced. However, as soon as the force is removed, the cords appear to draw the limb back into its original position with a snap as if made of rubber. I have wondered whether or not these chances, if chances they are, might be jeopardized should such an operation be performed and prove unsuccessful.

M. D. M., Washington.

Answer.—This may be a case of inflammation or irritation of the fibrous tissues which surround the joint. The inflammatory or muscular rheumatism in childhood may have made the patient more susceptible to a subsequent attack during adult life.

The joint cartilage probably has lost its billiard ball-like smoothness and has become roughened. There may be a situation analogous to gluing two pieces of sandpaper together, making a firm fusion.

Roentgenograms, or x-ray films, are usually the final criteria in determining whether movement in the joint structures themselves is possible, although sometimes these pictures are misleading. It would evidently be a mistake to operate on the "cords" if there is fusion in the joints.

There is not much chance of regaining lost motion by a "gradual building up of general health" although this is of great importance. It is impossible to carry out exercises when the soft tissues are in a contracted state.

If there is still some local infection in these parts, it is most important that an effort be made to control the foci of infection which may be the primary sources. Physical therapy may be of great help and may include radiant heat, massage, underwater gymnastics and gentle stretching. It is possible to apply a plaster of paris cast which can be "wedged" so that gradual correction can be obtained. Careful manipulation under an anesthetic, so as to eliminate pain and muscle spasm, may be of considerable value. An operation would probably not jeopardize the future chances of recovery.

Grinding of Teeth During Sleep

To the Editor:—On page 53 of the booklet "Answers to Popular Health Questions," in connection with teeth grinding during sleep the suggestion is made to use "a fixed night appliance which can be attached to the teeth in such a manner as to prevent grinding." May I have some information concerning the details of the appliance?

F. W. N., Pennsylvania.

Answer.—This appliance acts mainly to keep the involved teeth out of occlusion. The movements of the jaw are not stopped by the appliance, but the teeth on which the grinding has taken place are protected. The appliance is usually made of vulcanite and should be designed for each individual case.

If, for example, the grinding is taking place on the incisor teeth, the appliance is made so that the incisor teeth do not come into occlusion during sleep. If any grinding takes place it will be the posterior teeth against the softer vulcanite. The vulcanite will wear instead of the teeth.

In some instances it has been found that an overactive life has been a definite factor in the continuation of grinding. The lessening of activity has been of considerable aid in correction. The appliance cannot correct the habit but merely checks it while the patient wears it.

Lens Grafting in the Eye

To the Editor:—Several articles have appeared in the papers concerning the grafting of the first lens to the eye. Is much of this work being done in the United States? Just what success do these operations attain, both as to vision and eye comfort? I suffered acute glaucoma along with a cataract condition in both eyes. I was fortunate to recover with practically normal vision and returned to my office work after four months. My health is excellent, and I get by with my work in a splendid manner; however, there are many drawbacks to the condition and the wearing of the special glasses, and if it ever became possible to have the grafting done I think I would try it.

H. H., California.

Answer.—There is much confusion about grafting on, or in, the eye. When a tumor or a scar is removed from the eye or the lids, the raw surface can be covered by a graft of skin, which will make the eye look right. When an eyeball is diseased or when it is blind and unsightly from an accident so that it must be removed an artificial glass eye can be fitted into the socket, exactly resembling the natural eye. Sometimes, instead of removing the whole eyeball, a glass or metal ball is placed in the stump, and an artificial eye is put over it. This gives the best appearance and movement of the artificial eye. These things are all done to help the patient's looks. They never restore or improve his sight.

The cornea is the clear coat in front of the eye. If made opaque by an ulcer or an injury and if the other eye is entirely blind, a piece of the opaque cornea may be cut out and a piece of clear cornea from another human eye may be fitted into the opening. Thus some sight may be restored to a person otherwise blind. Such grafted cornea may "take," so that it remains clear. This is the real use of a graft. It would never be done for an eye that had any useful sight without it.

A contact glass is a lens put under the lids, like an artificial eye. With a clear cornea left irregular by injury or disease, a suitable contact glass may make the sight good. Some persons can wear a contact glass for hours and do much work with it. Others can only tolerate it for a little while. The tissue never grows fast to it, so it is not a graft. A glass ground to fit the focus of an eye after removal of cataract would be too thick to wear as a contact glass and would not serve as well as the right lens worn in the ordinary frame. The crystalline lens of one eye cannot be grafted into another eye. Having no blood vessels of its own, it would quickly become a cataract.

Dentures

To the Editor:—What cleaning preparation is best for dental plates?

E. W., Indiana.

Answer.—The secretions which collect on the dentures are generally undigested food materials and organic and inorganic materials from the saliva.

The most essential instrument for cleaning the denture is a so-called denture brush, adapted, as far as possible, to the contours of the denture. The action of the brush may be assisted at times by the use of various abrasives or materials having a mild chemical action.

The following may be used in addition to the denture brush: baking soda, finely ground chalk, finely ground pumice and household cleansers, such as Bon Ami, Gold Dust and others of this type which have been suggested from time to time. Also, dilute solutions of alkalis may be used, such as trisodium phosphate (paint brush cleaner), sodium perborate, washing soda or a dilute solution of household ammonia, approximately 1 per cent. One of the methods which has been suggested most frequently is immersion of the dentures in liquids like sodium hypochlorite, followed by brushing. The solutions mentioned are sold in grocery stores for laundry and other household purposes; some may be obtained in drug stores.

Such a solution may easily be prepared by any amateur by mixing together one ounce of common washing soda with a half ounce of chlorinated lime (bleaching powder). These two powders are thoroughly mixed and kept in a glass bottle securely corked. One ounce of this mixed powder is added to a pint of tap water and well shaken. After a few hours the clear liquid is transferred to another bottle. A half teaspoonful to each glass of water should be used.

The nature of the solution chosen to assist the brush should be dependent on the type of denture material. Formaldehyde and phenol-formaldehyde dentures are, on the whole, resistant to most chemical agents. Dentures of the ester type, on the whole, undergo decomposition when immersed in solutions having an alkaline reaction. Some experiments made in the American Dental Association Bureau of Chemistry have demonstrated that some of these denture cleansers made of sodium peroxide, which forms sodium hydroxide in contact with water, injure some of the newer denture materials relatively rapidly.

First Aid in Drowning

To the Editor:—As I am interested in saving lives from accidental drowning, will you furnish me with some information pertaining to resuscitation methods now encouraged? If a body can be brought to the surface within five minutes after submersion, what is the general chance of recovery? Also, what resuscitation methods do you encourage at present, and can epinephrine be used as successfully as has been claimed for it? How long can the average normal person in good general health be submerged and stand a fair chance of recovery?

J. L. M., New Jersey.

Answer.—If a body can be brought to the surface within five minutes after submersion, the chances for recovery are good. Thereafter, the percentage of recoveries will rapidly decrease with increasing time. Just how long a person could be submerged and recover is not definitely known. Most of the figures on drownings are worthless, for often the time of submergence is not known, and in the general excitement, time is seldom accurately kept. Animal experiments have shown that prevention of respiration for from twenty to twenty-three minutes is usually fatal. In the rare cases of recovery at or beyond this limit there is apt to be irreparable injury to the central nervous system. In all probability the same statements are relatively true for man.

In regard to the cardiac injection of epinephrine in resuscitation, the best medical advice is against its use. It is of no value merely in the heart chambers. It is useless unless it can be circulated, and if the circulation is under way the drug is not needed. If the injection is directly into the cardiac muscle, only a small region can be affected unless again the circulation is in progress. Furthermore, there is danger from the needle puncture, and in some cases the presence of epinephrine may incite fibrillation. The spectacular results from its use are generally believed to be in cases in which there would have been spontaneous recovery.

The kind of resuscitation to be recommended is almost always the prone pressure method. It gives sufficient ventilation, and it automatically provides for the outflow of secretions and water from the respiratory passages. The tongue does not block the airway. A fact of the greatest importance is that the procedure can be carried out by one individual. It should be undertaken at once and continued either until all muscular tonus is lost or until rigor appears.

NEW BOOKS ON HEALTH

(Continued from page 735)

ADVENTURES IN LIVING

By Thomas D. Wood, M.D., Annette M. Phelan, Ph.D., Marion O. Lerrigo, Ph.D., Nina B. Lamkin, A.M., and Thurman B. Rice, M.D. Cloth. New York City: Thomas Nelson & Sons, 1936.

NOW WE ARE GROWING. Price, 60 cents. Pp. 218, with illustrations.

MANY WAYS OF LIVING. Price, 60 cents. Pp. 209, with illustrations.

KEEPING FIT. Price, 72 cents. Pp. 237, with illustrations.

BLAZING THE TRAIL. Price, 80 cents. Pp. 248, with illustrations.

HOW WE LIVE. Price, 80 cents. Pp. 328, with illustrations.

THE series is well titled. It represents truly an adventure in health and hygiene, which have been described as being taught in a vacuum and having no relation to life and daily experience. These books utilize the everyday experience of the everyday child, and for that reason they should make a strong appeal to him and do much to overcome the attitude of contemptuous indifference which characterizes most children's reactions toward courses in health and hygiene. In the first volume we learn about a picture "it takes a year to make," "a puppy which joins the family," "a visit to a dairy farm," "a welcome to winter," "green things growing" and other topics which contribute to the title. Lively pictures in two colors help to dress up the text, and each chapter has at the end some simple but interesting suggestions about things to do.

The second volume is true to its title and presents indeed many ways of living. It deals with boys and girls in many lands, with sleep, sunlight, dress, baths, thinking clearly and keeping fit. It too is well illustrated and has interesting suggestions and things to do.

In the third book we meet the German Chieftain and the Roman Bath and are introduced to such intriguing subjects as "Iron Miners in the Garden," "A Plan with Good Teeth in It," "The Birthday of a Lamp" and "Fit for a Great Adventure." The subjects are intriguingly treated and presented with many interesting illustrations, including photographs, drawings and map sketches. There are instructions for study activities and for keeping a record of growth.

"Blazing the Trail" deals with the adventures in science of great discoverers and brings their discoveries home to everyday life. The section on "Common Sense for Horse Sense," having to do with alcohol, is excellent, avoiding the mistakes formerly so common in temperance education. The last volume, "How We Live," deals with the body more in detail by telling how it is made, how it works and what to do under certain circumstances when things go wrong. The whole series is characterized by a lively interesting approach and should be enjoyed by students as well as teachers.

W. W. BAUER, M.D.

THE GAME WAY TO SPORTS

By H. Atwood Reynolds, M.A. Cloth. Price, $2. Pp. 210, with 75 diagrammatic illustrations. New York: A. S. Barnes & Co., Inc., 1937.

THIS book was compiled to meet the need for games involving sports' elements that can be presented to novice groups in limited spaces. It includes a selection of the existing lead-up games, variations of games into adaptations for lead-up purposes and games particularly devised by the author. It embraces such sports as baseball, football, basketball, swimming, soccer, tennis, golf, and field and ice hockey. These lead-up games do not stress formal and disciplinary procedure but provide instead an "interest method" of learning skills.

Useful tables on each sport, which are given in the appendix, provide information on the field, equipment, formation, players and the various technics essential to the various games. These forms are given for the help of instructors who wish to devise games of their own. Directions in the text are concisely presented and are augmented by charts and line drawings.

LEOLA J. HARRIS.

A HEALTH EDUCATION WORKSHOP

By Kathleen Wilkinson Wootten. Paper. Price, $1.50. Pp. 273. New York: A. S. Barnes & Co., 1936.

TO GAGE the effectiveness of health education as well as to make practical application of health knowledge obtained from lectures through reading, workbooks are needed. This workbook is complete, detailed and yet concise. The subjects presented have been divided into four subdivisions: (a) Objective, (b) Study Outline, (c) Activity and (d) References. Under Study Outline the problem is presented from every possible angle. Instructions on how to study the problems are given as well as suggestions for studying the problem from the local angle. Under the subdivision Activity the author makes suggestions for specific assignments for the students. The references at the conclusion of each chapter are complete and authoritative, and they include textbooks as well as magazines and pamphlets. The bibliography at the beginning of the workbook is excellent. Only the most modern and authoritative authors' works are included. It is left to the discretion of the teacher as to how much time need be spent with each subject. The references are there to use, and each teacher can choose the ones most applicable to each community. This is a workbook which can be recommended for teachers and for those in training to become teachers as well as for public health nurses who have an interest in the teaching of health. Parents who are desirous of giving their children training along the lines of health, without being too dependent on the school for such training, will find this book invaluable.

PAUL A. TESCHNER, M.D.

STEP BY STEP IN THE NURSERY SCHOOL

By Jennie N. Haxton and Edith Wilcox. Edited by Albert Fink. Price, $1.50. Pp. 224. Illustrated. Garden City, N. Y.: Doubleday, Doran & Co., Inc., 1936.

MOTHERS AND teachers of children between the ages of 2 and 5 will be delighted with this book. Unlike the ordinary textbook in psychology and education, which contains many dogmatic statements presented in a formal way, this book contains many case studies. They are taken from the actual records of a nursery school. The subject matter is suggested by the actual difficulties of children in adjusting themselves. Among those difficulties are temper tantrums, domination, slapping, eating, wetting, walking, touching and possessing, and insecurity and fear.

The authors proceed on the assumption that when physical causes of misbehavior are eliminated, persistently undesirable behavior is the result of the conditioning. The procedures used in corrective treatment indicate the methods used step by step and day by day. The chapters are interesting because one wonders just how these adventures in training are going to come out. At times one may seriously question the procedure, but at the end of the chapter there is always a discussion which makes clear the reasons for the action. The questions scattered through the text are stimulating.

Teachers and parents who think of little children as "miniature adults" who are capable of assuming adult standards and powers will receive a rude shock. However, if they then adopt the thesis of the book that children are developing personalities who must take certain steps if they are to reach maturity, they will find "Step by Step in the Nursery School" a mine of information and suggestion.

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Each percentage represents the proportion of the total day's requirement that a serving of this delicious cereal with milk affords*.

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Every woman, who has to serve about 1095 meals a year, knows that it is not easy to plan meals that are both appetizing and healthful. But this is a highly important job. It can be made simpler by understanding what the various foods do for the body and what the food requirements of the members of your family are at various seasons of the year.

One of the chief factors in maintaining good health is an intelligently selected diet. Menus for each day can be planned to include the food elements needed for every member of the family.

Five-year-old Tom, a whirlwind of activity, needs foods that will keep him supplied with energy—bread and butter, cereals, potatoes, desserts. He also requires foods that will build bone and muscle during his growing years—meat, fish, eggs, poultry. He should have fresh vegetables and fruits, because they contain minerals and vitamins that help to keep him well. Right now, when fruits and vegetables are plentiful, you have a wide variety from which to select.

The grown-up members of the family need the same kinds of food, although they may require some of them in smaller quantities than are necessary for growing boys and girls. Milk, as everybody knows, is one of the most important of all foods. A child should have a quart a day and adults a pint.

The most nutritious foods do not necessarily cost most. Less expensive foods can often be prepared in a way to tempt the appetite and give the required nourishment.

The Booklet, "The Family Food Supply," will help you plan delicious, economical and healthful meals—Send for it

This booklet tells in detail the importance of various foods—how to use them to keep your family in good health; how to save money on your marketing; how to use leftovers and make them appetizing; how to plan balanced and nourishing meals which the family will enjoy. Write today for your free copy. Address Booklet Department 837-Z.

METROPOLITAN LIFE INSURANCE COMPANY

FREDERICK H. ECKER, *Chairman of the Board* LEROY A. LINCOLN, *President*
ONE MADISON AVENUE, NEW YORK, N. Y.

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MAD DOG!

(Continued from page 740)

"I see." Sonny sat thinking a while.

"But, Dad," he resumed, "isn't there any way to keep these stray dogs from biting our home dogs and us and giving us rabies?"

"Of course there is, Son. We've got dog pounds everywhere to deal with them. That's what dog pounds are for, to pick up all these extra dogs that breed so fast and put them out of the way before they do us any damage. But it seems that every once in a while the pound officials kind of fall down on the job, maybe because of politics or what not, and then, after a while, there are far too many strays roaming about. Pretty soon a mad dog drifts in, biting any and every dog he meets. Well, you can imagine the rest! The thing that peeves me is that if the dog pounds were on the job and kept on picking up the strays all the time, as they're supposed to, there wouldn't be any mad dogs to bite the others!"

"I see, Dad, and then rabies wouldn't have a chance to spread at all."

"That's it, Son! It's been proved many times the world over—in England, in Holland and in lots of places. No stray dogs—no rabies! And no children bitten."

Sonny understood. "When there are lots of stray dogs, then pretty soon there's goin' to be rabies around, and more home dogs bitten and more children bitten too," he concluded.

"Yes, that's right. I guess you're a pretty smart boy," the old man conceded.

"Well, then, why aren't these stray dogs picked up all the time and taken to the dog pound?" asked Sonny.

"Oh, just because, as I said, the officials sometimes get lax; but also, lately, because some misguided people have been opposing it.

"But, Dad, why *should* they?"

"Well, Son, I suppose it's because they've worked up a sort of sickly sentimental feeling for these 'poor stray doggies' that have such a hard time, and they're sorry for 'em."

"Oh, but they ought to be a lot sorrier for the home dogs that we love and for us kids that get bitten by having so many stray dogs around!"

"Of course, Son, that's right!"

"Well, then, Dad, how can we stop this rabies around here?"

"Easy enough, Son. Just by picking up all the stray dogs—pronto—and sending 'em to the pound.

I've been talking to Si about that, and I guess he's going to see to it."

"Will he really do it?"

"Yes, I think he will, now, after what he saw up the road today."

Sonny blinked and yawned. "Well, Dad—I—I guess I'm getting sleepy. Is—is that all the story tonight?"

"Yes, Son. That's about all. But tomorrow, Si and I are going to have a mighty busy day seeing that all these stray pups are picked up right away!"

"What'll you do with 'em, Dad?"

"We're going to send them to the state medical school to use in their laboratories so we can learn more about how to cure rabies and lots of other diseases in people and in dogs too; that is, in the home dogs, the ones we love."

"O.K., Dad—I guess you're right. But I'm getting awful sleepy now! Can I stay here in the chair, maybe —and sleep . . . with you . . ." His voice trailed off.

The old doctor waited quietly till the child was sound asleep. Then he lifted him carefully and carried him off to bed.

BOWLEG AND KNOCK KNEE

One frequently sees on the streets of any village or city many children from the age of about 14 months to 5 or 6 years that have difficulty in walking, which may be due to either bowleg or knock knee. The cause of these two conditions is often rickets or too early walking, especially if the child is overweight.

They are readily treated in babyhood and during early childhood by simple measures which should be carried out. The child should never be urged or made to stand and walk until the bones are hard enough to support him. If the mother simply stretches the child's legs from twenty to forty times a day in the opposite direction of the deformity, a cure will result in most instances. This procedure requires a definite daily routine that must be carried out regardless of whether the baby cries or the grandmother disapproves. Braces and surgical operations are prescribed for older children with more advanced malformations.

It is important that the physician be consulted to determine first whether the child is a victim of rickets. If this is the case, the conditions may be readily corrected with proper diet and other regulations.—*Nassau Medical News.*

I take the true definition of exercise to be labor without weariness.
—Samuel Johnson.

Need she be less HEALTHY Ten Years from Now?

● Often, by the time a youngster like this finishes grade school, she will be less healthy, less energetic, less mentally alert than when she started. This may be the result of poorly designed school seating ... antiquated desks that force the child to stoop over or slump down, cramping vital organs, bending the spine, straining the eyes.

How much better it would be to provide her with scientifically designed, posturally correct seating like the American Universal Better Sight Desk shown below. This product, the result of years of research and specialized experience, makes it easy and natural to sit posturally correct. The book holder makes learning easier, less tiring. Print can be seen clearly. Eyes are never strained from bending over or slumping down.

Co-operate with school officials who wish to install this modern seating. It is one of the important things you should do to make sure your child remains robustly healthy, physically unimpaired by school work.

FREE BOOKLET

If you have a child at school, or will have, you need this interesting, enlightening booklet. Address Dept. H 8 for your free copy.

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GRAND RAPIDS, MICHIGAN
Branch Offices and Distributors in Principal Cities
Manufacturers of School, Theatre, Church, Auditorium, Stadium, and Transportation Seating

The STRAIGHT LINE in Health

THINKING and acting straight on health matters sometimes requires a little extra effort—but the result is always a life freer from worry and more worth living.

Calling a doctor about persistent little aches and pains, and "minor injuries" before they have a chance to grow serious is one indication of "thinking and acting straight."

Reading an interesting, unbiased and authoritative health magazine, published for the whole family, is another indication of "thinking and acting straight."

HYGEIA, the health magazine, is sponsored and published by the American Medical Association. It is the medium of Scientific Medicine through which you are aided in thinking and acting straight on health matters. If you haven't already subscribed to HYGEIA why not sign the coupon?

IN THE NEXT ISSUE OF HYGEIA

TEACHING CHILDREN TO LIE

THE USES OF X-RAYS AND RADIUM IN MEDICINE

DON'T LET YOUR CHILD GET FAT

HOW OLD IS ANNE, SOCIALLY?

WHAT CAN BE DONE FOR ARTHRITIS?

THE ORAL SYMPTOMS OF GENERAL DISEASE

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535 N. Dearborn St., Chicago, Ill.

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NATURAL METHODS in BIRTH CONTROL

IT IS now generally accepted that there are definite sterile periods, making birth control possible without the aid of artificial means in many cases.

The doctor's "Time Table" method of birth control, which is a guide in following nature's course, has been incorporated in the simple * MEDICAL ARTS SLIDE RULE that charts sterile and fertile periods for each individual. It does not require the use of any chemical or mechanical device or appliance.

Accompanying the * Medical Arts Slide Rule is a small six-page pamphlet written in simple, non-medical language that gives a clear explanation and easy instructions.

*U. S. Patent No. 1,983,062
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Send me postage prepaid, "Medical Arts Slide Rule" with instructions, for which I enclose $1.00.

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Health pamphlets

Child Welfare Supplies

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—Record Sheet..... 5c
—Anthropometric Table..... 5c
—Mother's Milk.....15c
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MENTAL HEALTH IS IMPORTANT TO PHYSICAL HEALTH

Mental health concerns itself with the emotions, the mind and the behavior of the individual. There are degrees of mental health just as there are degrees of physical health. The goals of mental health are emotional maturity, integration of personality and social adjustment. The problems confronting persons lacking in one of these may be many.

One problem of mental health is indecision. This problem is difficult to trace to its source, and the cause of it varies with different persons in accordance with their early training. Indecision indicates lack of integration of personality and is a hard problem to overcome. This is closely tied up with another typical problem of mental health—a feeling of inferiority. This necessarily creates a feeling of indecision because one lacks assurance and has doubts and hesitations which otherwise one would never have. Some persons overcompensate this feeling and become bullies, finding great personal satisfaction in forcing people to obey.

At different ages there are different emotional problems to be met. During childhood there are various problems typical of different ages. During adult life we have such problems as love, marriage, parenthood, illness, death, old age, unemployment and business reverses. The person who has good mental hygiene is able to meet these various problems with buoyancy and strength.

It is important to realize that all forms of behavior are natural under various circumstances; what is normal and natural for one person is not so for another. In the field of mental health it is therefore impossible to judge by one's own experience what is good for another person.—*Mental Health Bulletin.*

KEEP MILK TEMPERATURE LOW

Milk is an ideal food for the growth of germs. Unfortunately disease germs as well as germs of other types thrive in milk. Temperature is as important in the growth of germs as it is in the growth of field crops. Corn will not receive its maximum growth in cool soil; neither will germs grow as rapidly in cool milk as in warm milk. Therefore it is highly important that milk be cooled immediately after milking and kept at a low temperature until it is processed or delivered to the consumer.—*Indiana Division of Public Health.*

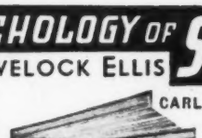
Thanks to this Waterproof Baby Powder

Baby's happy smile . . . the thing you treasure most . . . depends so much on a healthy and comfortable skin.

Merck Zinc Stearate, the *waterproof* baby powder, is the secret of many a baby's happy disposition. This fine powder spreads in a soft, dry film over baby's tender skin, protecting it from the irritation of wet diapers and perspiration. No diaper rash, no chafing in the little creases of arms and legs, can disturb baby's happy days and restful nights.

Merck Zinc Stearate comes in a dainty pink and blue can with a self-closing top. Your physician and druggist will tell you that the name Merck on any product is a guaranty of purity and reliability. Merck & Co. Inc., Rahway, N. J.

MERCK
ZINC STEARATE

PSYCHOLOGY OF SEX
by HAVELOCK ELLIS
ONE VOLUME • UNABRIDGED

CARL VAN DOREN says: "The best one-volume treatment of sex in the English language."
"...the best of all available books on this subject." —HYGEIA
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389 Pages, Price $3.00 (Postage 15c extra)
5-DAY MONEY-BACK GUARANTEE
Emerson Books, Inc., Dept. 82-A, 251 W. 19th St., N.Y.C.

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that just before and after baby arrives it is important to give the breasts the upward converging control obtained only by the Patented A.P. Uplift, designed by Mme. Poix. Prescribed extensively and used by Hospitals and Maternity Centers.
Sizes 30 to 44
Mercerized Repp....$1.25
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If not at dealers, order direct giving exact bust measure next to skin.
G. M. POIX, Inc.
103 Madison Avenue, NEW YORK, N. Y.

Cosmetics and Allied Preparations
A pamphlet of 32 pages which should lie on the office table within easy reach of waiting patients. This is a much needed treatise on nostrums of the cosmetic type widely advertised, and sold indiscriminately to the public. Give your patients the benefit of reading this booklet. Price 15 cents. *Ask for a complete list of Nostrums and Quackery pamphlets.*
AMERICAN MEDICAL ASSOCIATION
535 North Dearborn St., CHICAGO, ILL.

Mother! Give Your Baby A Chance—
To kick, stretch and enjoy the comforts of *Pant-ease* – the MODERN, KNITTED COTTON – SIDE PINNING DIAPERS that give and stretch with every move of your baby's little legs and body . . . . . .

No Folding ··· No Seams
No Loose Ends to hang down or become bunched where they do not belong
Highly Absorbent · · · and Launder Beautifully.
KNITTED . . COTTON
Pant-ease DIAPERS
Send for FREE BOOKLET
For SAMPLE GARMENT enclose 15¢ (State Baby's Age)
PANT-EASE INFANT WEAR CO. DEPT. 503 ARCADE, N.Y.

"DOCTOR, WHAT DENTIFRICE SHALL I USE?"

(Continued from page 716)

moved supposedly by the use of so-called fruit acids and again, in still later years, by the use of special polishing agents. Nowhere does there exist evidence of the necessity or the desirability of removing all film. Honest dental scientists have no ready means of diagnosing between coverings on the teeth which may be protective and those involved in the production of decay. One investigator has noted the presence of a brown stain which, in ordinary conversation, may be recognized as "film" or as a stain, and which is associated with an assumed immunity to dental caries (decay). Strangely enough, this film cannot be removed, even by brushing with pumice. A domestic investigator has noted that some films may be protective, others may be destructive, but all honest investigators appreciate that the problem is still wide open. It is so far from settled as to cause objection to the claims that a toothpaste will remove the film. It is an encouraging sign to note that the film theme is forgotten in current advertising for this particular dentifrice.

Another common claim is that toothpastes whiten teeth. The term "whiten" must not be confused with cleansing. Cleansing is a general term. To dentists the term "whiten" means actual bleaching of the teeth. Only dead teeth can be bleached and this only by a relatively drastic chemical process from the inside. The shade of teeth varies from cream to steel gray and is conditioned in part by the complexion in which they are set. No one has yet shown that the shade of teeth can be changed, even by the faithful use of a dentifrice three times a day. The whitening claim was carried to its most ridiculous extreme by a manufacturer of a toothpaste containing about 25 per cent soap and 20 per cent alcohol. This advertiser promised to change teeth three shades whiter in three days and by so doing to bring biologic bliss to unkissed maidens. This was combining science and sex appeal, both of which figure prominently in toothpaste advertising. Unfortunately for dateless maidens, at the request of the council a group of dentists investigated and found that the use of this toothpaste, according to the advertiser's technic, did not change the shade of the teeth one iota.

Another claim was that the ugly yellow mask formed by bacteria is removed by this toothpaste. There is no sound reason for believing that dentifrices will exert antiseptic action. Therefore such claims as appear from time to time, of killing millions of bacteria, are wholly ridiculous.

The advertising agency for a toothpaste containing about 5 per cent soap, with chalk, glycerin and other agents common in a toothpaste, is greatly disturbed because bad breath is a social handicap and may cause the loss of a job or make college no fun for the co-ed. The Council on Dental Therapeutics has given this firm an opportunity to submit evidence to show that their toothpaste overcomes bad breath, and they have not done so. Haggard, of "Devils, Drugs and Doctors" fame, showed that brushing the teeth with chalk and soap will not overcome "bad breath" induced by eating onions. Bad breath, like bleeding gums, may be due only to local causes. Indeed, much bad breath may be due to decaying teeth or to local diseases in the mouth. On the other hand, bad breath may be a symptom of serious underlying disease. A well known English internist has put the situation thus:

"The breath has many important smells. . . . I have formed the habit of asking my ward clerks to smell the breaths of diabetic patients in the wards, and when the pleasant faintly fruity odor is evident. . . . Apart from making the diagnosis of diabetes in the presence of glycosuria, it may also quickly settle the cause of a coma and so help to save a life. The uremic breath is another important one. . . . I have not yet determined how constantly and at what level of the rising tide of nitrogen retention it becomes appreciable in the breath, but it has helped me to the diagnosis and prognosis of advanced renal disease."

Another advertiser would have us believe that "smokers' teeth" bring on decay and that a toothpaste not much different from any other on the market overcomes this "disease" because it removes tobacco smoke stains from handkerchiefs. The editors of *Readers' Digest* solved this little problem for themselves and their readers. They found that this toothpaste did not remove tobacco smoke stains from a handkerchief as well as soap; yet the treasurer of this company frankly told his advertising brethren that their campaign to the public was frankly built on fear,

because fear is a great selling force. In view of this remarkable advertising discovery it is unfortunate that many mothers did not know that smokers' teeth cause decay, for decay is a disease of childhood. According to the logic of the smokers' teeth scientists, over 90 per cent of the children of the country should have been smokers.

Every week there comes into the homes of millions of Americans this unsought advice, "Do as your dentist does, use powder." This may be dismissed with a statement from the official book of the Council on Dental Therapeutics, "Accepted Dental Remedies":

"There is no essential difference in the cleansing properties of a tooth powder over a tooth paste. Indeed, it is well known that pumice or silica used for prophylaxis is made into a paste with glycerin or water before application to the teeth.

Yet it may be interesting to point out that in 1927 the tooth powder with which this phrase has been publicized was found to be among the most abrasive on the market. Nothing has appeared in the literature to show that it has been made less abrasive.

To whom may you look for an answer? By this time the reader may be inquiring, "What and who is the Council on Dental Therapeutics?" The Council on Dental Therapeutics is not a self appointed body of reformers. The council is patterned after such bodies as the Council on Pharmacy and Chemistry and the Council on Foods of the American Medical Association. The council consists of ten members, five scientists outside of dentistry and five dentists, appointed by the American Dental Association to advise its members and the public of the composition of dental products and the honesty of their claims. None of these members, with the exception of the full time secretary, receives any compensation. They are not interested in advertising revenue; they are solely interested in the service they can help dentists render to their patients. The council has been critical of most of the common practices used in purveying dentifrices to the American public. But they have not lost confidence that dentifrices can be made safe and sold honestly. This confidence is supported by an increasing interest on the part of dentists and of consumers in the so-called dentifrice problem. A higher I. Q. and a higher I. P., that is, intelligent questioning and intelligent purchasing, may cause the copy writers to appreciate that, after all, not all Americans are of moronic intelligence.

Unfortunately, many of the nationally advertised dentifrices do not appear on the council's list. But this is accounted for by the undesirable composition and shady methods of bringing these products to the public. Undoubtedly, many national advertisers would like to have their advertising honest in the full sense of the word, but competition and economic conditions made them do unto others what they might not like to have done unto themselves.

Frankly, it may be a bit difficult to obtain council-accepted dentifrices, for not all druggists may carry them, but if the consumer desires safe and honestly advertised dentifrices and makes his desires felt enough at the drug store, he may expect to be supplied. More importantly, he may expect to see the national dentifrice advertisers treat him as if he were less of a moron, and with this will come increased quality at possibly decreased prices. This has already happened.

Dentifrices that have been made acceptable bear on the tube or in their advertising the seal of the Council on Dental Therapeutics of the American Dental Association.

THE DOCTOR'S WIFE HAS HER OWN TEN COMMANDMENTS

She must *not* know the meaning of the word "jealous."

She must never gossip.

She must run a cafeteria, serving meals at all hours for her husband.

She must be—like Caesar's wife—above reproach.

She must have self reliance and self control.

She must be able to think quickly and sanely in emergencies.

She must be a diplomat, see all, hear all, say a lot, yet say nothing.

She must learn to bear stoically and without complaint, disappointments in her personal plans.

She must be a good mother and father, because doctors are often too busy to discipline their own children.

She must be a good "doctor" because doctors never take time to doctor themselves.

—Northumberland County Medical Society Notes.

"Education is a better safeguard of liberty than a standing army."

—Edward Everett.

From Bonnets to Booties

these Triplets are protected by Lux

"With triplets, one must be extra careful with everything that touches their *extra*-delicate skins," says the mother of these babies. "I've always used Lux for their things. My triplets have not had any skin irritation to make them cross or endanger their progress." . . . . .

Mothers of twins and triplets have a special problem in guarding these especially delicate babies. Like wise mothers everywhere, they use gentle Lux for baby things because Lux has none of the harmful alkali found in many ordinary soaps—cannot irritate even the most sensitive skin.

Please mention HYGEIA when writing advertisers

Physiologic Birth Control

THE RHYTHM

of Sterility and Fertility in Women

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CANCER IN WOMEN

The cancer problem as related to women is largely an educational one, and it concerns both the layman and the physician. Especially does this refer to the layman, since the physician is powerless to render aid until the patient seeks his advice. The American Society for the Control of Cancer is endeavoring to educate women as to the value of undergoing periodic medical examinations and to teach them to consult a physician without delay as soon as symptoms develop. In the case of cancer of the female genital organs the symptoms usually consist of blood tinged discharge or abnormal bleeding from the vagina.

Cancer frequently attacks the female genital organs, the organs most often affected being the uterus, or womb, the ovaries and the external organs of generation. A common belief among laymen is that cancer of the uterus is incurable. This is absolutely untrue. While such a cancer is always fatal if treatment is neglected, the majority of cases are curable if treatment is instituted early in the disease. The proportion of permanent cures that are effected is in direct ratio to the stage of the disease at which treatment is begun.

In order to begin treatment early, two things are necessary; first, the patient must consult her physician; and second, the physician must recognize the nature of the disease. In order to conform to the first of these requirements, women should know that in the early stages of cancer of the uterus the only symptom that will be noticed is discharge or irregular bleeding from the genital tract. Hemorrhages from the vagina are especially significant. An increase in either duration or amount in the blood loss at the monthly menstrual period should receive attention at the earliest possible moment by consultation with a physician.

Any bleeding that develops after the establishment of the change of life is of ominous import and should under no circumstances be neglected.

Conditions are sometimes present in the female genital tract that, while not cancerous, may favor its development. Under these circumstances, treatment should be instituted in order to eradicate these predisposing factors. Prevention of so serious a disease as cancer is much simpler and more easily accomplished than its cure. A cure, however, may be effected if the condition is detected early enough. —*American Society for the Control of Cancer.*

ANIMALS OF DESTINY

(Continued from page 712)

occasion. The United States Department of Agriculture reports cases in which rats have gnawed the feet of elephants, gnawed holes in the bellies of fat hogs and killed young lambs.

The diseases disseminated by rats are so numerous and the epidemics so frequent that they are almost beyond listing. Bubonic plague is spread from rat to man by infected fleas. In the 1,500 years before the Christian era there are records of 41 epidemics and in the next 1,500 years, 109 epidemics, with many more since then. In one of the early epidemics which started at the seaport town of Ashdad and moved inland to Beth-Shemesh, some 50,000 persons died; the Philistines were so frightened that they not only returned the ark which they had captured from the Levites a few months previously, but they sent, among other presents, five golden rats. In the sixth century A. D. a pandemic of plague swept over the world, carrying off 10,000 persons daily and entirely disrupting all trade. In the fourteenth century a similar pandemic killed 25 million persons. The economic readjustment after such a catastrophe was acute, with labor at a premium and fields left untilled because of lack of help. The hedgerows which now form such a typical part of English landscape were made necessary at that time, in the redistribution of land. Social readjustments likewise took place, among which was the shortening of man's jacket so that his legs, clad only in trousers, were exposed to view from his hips down, much to the horror of the moralists. Churches which were started with one style of architecture were left untouched for many years and finally finished in another style. In the twentieth century, during twenty-five years, from 1898 to 1923, plague killed more than 10 million persons in India. In the United States strenuous measures have been taken against plague, with the result that few human cases occur. All ships arriving from plague infected ports are fumigated to destroy the rats; some seaport cities maintain official rat catchers to watch for evidence of plague.

Typhus fever is spread likewise from rat to man by the rat flea, with the human louse acting as an ally. A history of typhus includes a history of war. In the Granadan wars in 1490 the Moors killed 3,000 Spaniards, but typhus fever killed 17,000; in the siege of Naples in 1527, typhus fever killed 25,000 out of 29,000 French troops, with the result that Charles V of the Hapsburg line instead of Francis I of France was crowned "liberator and defender of the faith"; in 1632 during the Thirty Years' War, typhus fever defeated both Gustavus Adolphus and Wallenstein, so that no battle was fought; in 1741, typhus fever killed 30,000 Austrians, resulting in the surrender of Prague to the French; in 1915 during the late World War, typhus fever killed 150,000 Serbians in six months.

Rats convey several other diseases to man: rat-bite fever, resulting from the bite of infected rats; spirochetal jaundice, either from the bite or from other close association with rats; food poisoning epidemics, from food contaminated in various ways by rats; intestinal parasites, including amebic dysentery, tapeworms and roundworms, which may be harbored in the intestine of the rat or carried mechanically to infect food supplies.

Attempts have been made to find some useful purpose for rats. In medical research the tame albino rat is of some service, but the house rat is too ferocious. Rats have been used for food in times of great emergency, such as during the siege of a city in war, but their contribution in this manner has seldom changed the outcome of events.

Other animals have exercised an influence on the affairs of man to a less degree or in a less spectacular manner. The camel and the ass were among the first beasts of burden; the goat has supplied milk in many of the warmer countries, and with it the deadly undulant fever; sheep have provided not only food but also wool for clothing, together with "woolsorter's" disease, or anthrax; cats have infected man with several diseases, chiefly intestinal parasites.

The progress of man, since early times, has thus been influenced by the lower animals. The part which animals will play in the future rests almost entirely with man. We have learned to take full advantage of the animals economically in furnishing labor, meat, milk and amusement; any shortage in the supply will be our own fault. We have learned to control many of the diseases which animals convey to man, and we are still accumulating information; it is largely a matter of putting to practical application what we already know. We have learned to use animals for the alleviation of suffering, both in man and in animals and for the extension of human life; any curtailment of these activities will retard the progress of the world.

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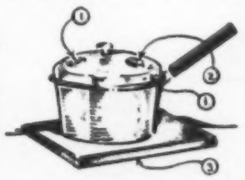

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SCHOOL AND HEALTH

(Continued from page 752)

plains that the library keeps in this file newspaper articles of any permanent value. The teacher and librarian look through the folders together. They find items clipped from duplicate copies of magazines and small leaflets sent out by various insurance companies and safety councils. There are also many different kinds of magazine clippings containing ideas for posters, projects, and games. There is even a list of motion picture films about health, fire prevention, public, industrial and railroad safety, first aid and the hazards of carbon monoxide gas. This list tells where each film may be secured and at what price.

"Many of the small leaflets in the folder are very enlightening. One contrasts the dangers of 1627 with those of 1927. . . . This gives the teacher an idea. Why not let the class write a four-act play based on the perils of each century since the Pilgrims landed in New England? By doing a little reading in the history of the country, and with the ingenuity of her pupils the teacher feels sure she will be able to work out a very entertaining program indeed."

Mrs. Palmer goes on to tell about the students who come to the library for safety material and how intelligently they make use of it. Naturally not every library is equipped to give such splendid service, but there is no reason why the school cannot develop its own library and information file. In addition to standard textbooks and manuals this might contain files of projects, plays, songs, verse, local and national accident facts, clippings describing local accidents, safety regulations, digests of motor vehicle codes, bicycle ordinances and so forth. Even if it is possible to undertake this plan in only a small way, it will do much to stimulate interest in accident prevention, and it will provide interesting activity for pupils.

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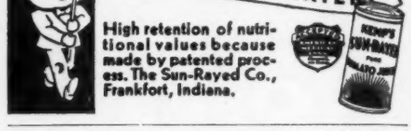
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To Contributors:—The editor of the School and Health Department will be pleased to receive articles dealing with the actual solution of concrete and practical health education problems in the school. Contributions on general theory are not solicited. Articles must not exceed 1,000 words in length. Stamps should accompany manuscripts to insure their return if rejected. All articles accepted will be paid for at regular rates. Address Editor of School and Health Department of HYGEIA, *67 Clyde Street, Newtonville, Mass.*

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Measles is a dangerous disease and should be regarded as such by the public. Too frequently the careless parent fails to see any connection between the sending to school of a husky boy, broken out like a broiled lobster, and the death of a neighbor's baby, which can usually be traced through a series of contacts to the original source.

In measles the catarrhal symptoms are first noted: coryza, sneezing, lacrimation, a brassy cough and a temperature of from 101 to 103 degrees. Bright red, slightly elevated spots with a tiny white speck in the center then appear, accompanied by a headache, anorexia, drowsiness and irritability. The rash appears first on the face and neck and spreads rapidly to the chest, trunk and extremities. During the next two days the eruption fades, and within seven or eight days from the onset the temperature is normal.—*Florida Health Notes.*

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OLD TEASER ASKS QUESTIONS ABOUT LIFE

(Continued from page 748)

for three weeks so often brought forth a chick pecking its way through the shell.

But there was still a question unanswered in Old Teaser's mind. The whole mystery would then be explained as far as his own curiosity was concerned: "If plants and birds have seeds and eggs, then how does it work in animals and people?" He was not at all abashed or self conscious.

"Do you remember that frog we saw in that pool last summer, the one that had a long string of eggs?"

"Sure."

"The eggs were rather small compared to the size of the mother frog, weren't they?"

"Yes."

"The tadpoles from the eggs could get food out of the water they swam in just as soon as they hatched. They did not need much food in the egg."

"It would be like us swimming in the soup we drink, wouldn't it, Daddy?"

"Quite," answered Dr. Answith, with a smile around his eyes. "It so happens that young animals like puppies, kittens and babies grow from very tiny eggs. They have no shell or other way to protect them if they were outside the body. Such an egg couldn't live at all that way. The embryo puppy or kitten could not really develop big enough, you see, on the food substance in the egg. So nature keeps it inside the mother's body long enough to develop lungs, a stomach and intestines so it can breathe and can digest milk. Then it is born into the world."

There was one other question which Old Teaser did not ask. It had not occurred to his 9 year old mind. Sooner or later it would, and I am sure Dr. Answith would have answered it simply and in such a fashion that his childish mind would be informed rather than intrigued. Suppose he had asked: "Daddy, how does the animal egg ever become fertilized so it will grow, if it is kept within the mother's body?"

I can imagine Dr. Answith answering in this manner: "Quiller, nature wants all the animals to multiply; so fathers and mothers have babies. Then the babies grow up, and they have their own babies. The babies come after the animals mate. People love each other and marry, which is about the same thing. You will have other questions to answer some other time. . . . I'll play you a game of 'Pick-up Sticks.'"

And that is about as much as any 9 year old can possibly understand about all he knows of the subject. Dr. Answith told me that most parents and even some doctors have trouble telling their children what they should know at just the right time. The right time, he explained, is when they ask the questions, no sooner, no later.

HABITS FOR CHILDREN

Children are in need of correct habits to help them happily and successfully through childhood. These habits form in part the basis for good mental health, and as the child grows into adulthood he continues to benefit immeasurably from them. The earliest years are the most satisfactory for habit training, and the training should concern itself with such matters as eating, sleeping, excretory functions and the like.

In regard to eating, it is thought that the conditions under which the small child eats deserve careful consideration. The room should be quiet, with no audience present just to watch the child eat. The food should be appetizing. Meals should be served at regular hours. No comments should be made about the undesirability of certain foods. One of the most common difficulties developing in the eating process is the child's refusal to take food or his spitting it out. If this occurs habitually with no physical basis for such behavior, it is well for the parents not to make comments, rather simply to remove the food and serve a fresh supply later. Otherwise the child gets attention which, even though it be in the nature of a scolding, he finds satisfying and stimulating to a repetition of his behavior.

In sleeping, it is important that even the young child should not sleep in the same room with his parents and not in the same bed with an adult because the child's sleep is thus disturbed by the presence of other persons. The child senses and takes in experiences long before he can understand them, and the impression may stay with him and become a source of disturbance in later life.

Often the child can be helped to "grow up" by being given praise and approval in that which he deserves. Approval by the parents means a great deal to the child, and therefore the parents can often use this to help the child give up his infantile patterns for more mature ones.—*Connecticut Department of Health.*

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PLEASE SEE PAGE 673

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